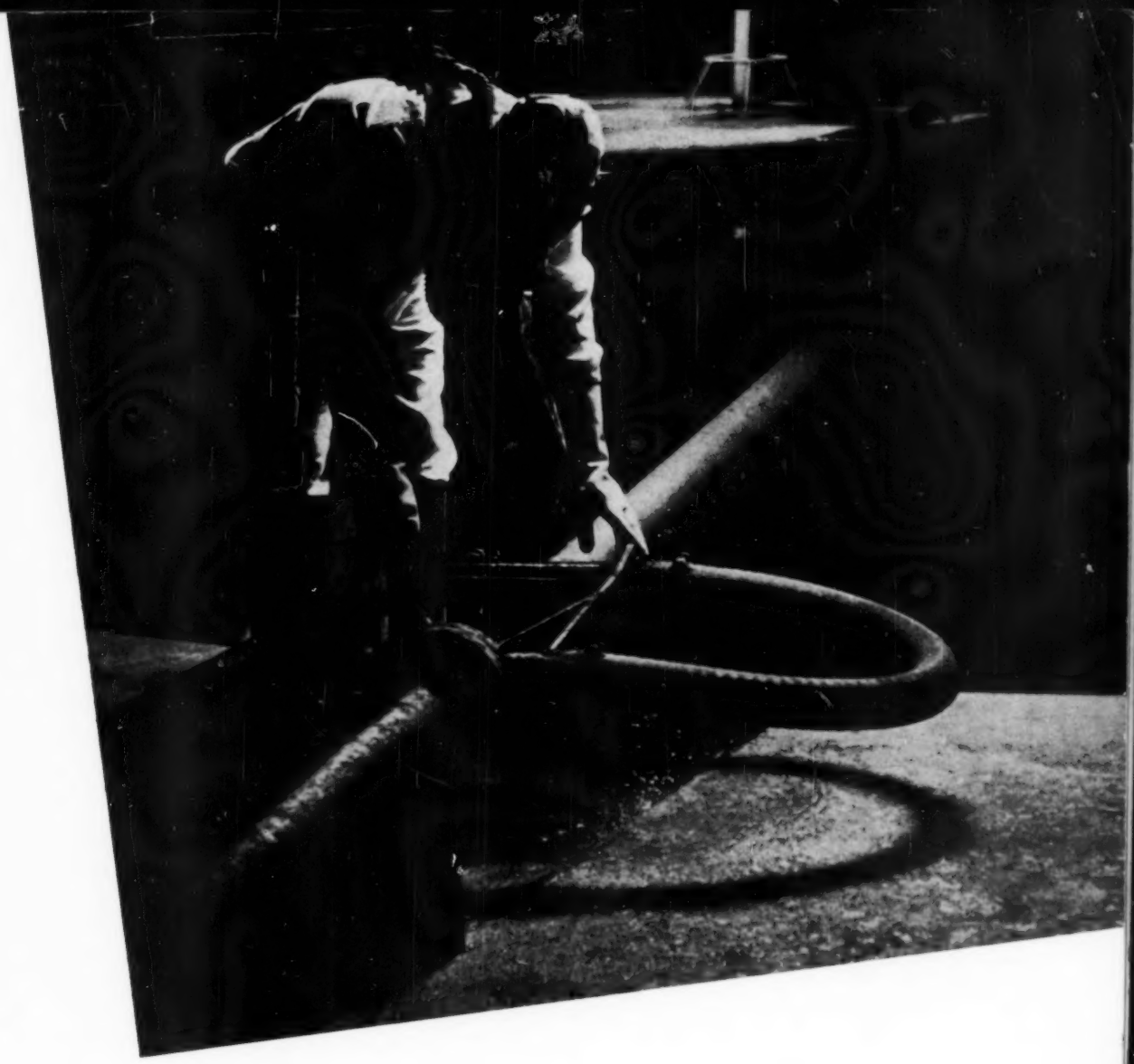

Safety Maintenance

AMERICA'S PIONEER INDUSTRIAL SAFETY MAGAZINE • FEBRUARY, 1961 • 50¢

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LOSS STOPPERS

The bulletins and catalogs reviewed below are offered by the Reader Service Department of *SAFETY MAINTENANCE*. To obtain copies without cost or obligation, write in the key numbers on the Reader's Inquiry Card.

MISCELLANEOUS

Sling, Link and Hook Data 470
Jones & Laughlin Steel Corp. 16-page illustrated brochure gives specifications and working load limits for the company's line of alloy chain slings, rings, links and hooks. The literature describes the advantages of alloy chain slings over wrought iron or carbon steel chains. Also includes information on sling use and maintenance, and a periodic inspection program. Sling identification chart included.

Explosion-Proof Controls 471
The Partlow Corp. Two-color, four-page booklet describes indicating, non-indicating and recording explosion-proof electrical controls in a wide variety of temperature ranges up to 1100°F. The controls, for use in hazardous atmospheres, are made safe by isolating the electrical circuits and switching mechanism in a compact, die-cast aluminum case.

Marine Maintenance 472
Dunham Chemical Co. New brochure outlines the uses and effectiveness of heavy-duty degreasers; combustion catalyst for ships' boilers; cargo tank detergents and degassers; demulsifier and desludgant for marine fuel systems; cleaner and degasser for double bottoms; cleaner for ships' electrical equipment, etc.

Moisture & Density Probes 473
Nuclear-Chicago Corp. Six-page brochure describes how to use nuclear gauges for rapid field determination of moisture and density in soils, aggregates, concrete, asphalt, etc. Probes are used to determine soil stability, air field runway sub-surface evaluation, sub-surface building foundation studies, etc. Full gauge specifications are provided.

Mercury Vapor Lamps 474
Westinghouse Lamp Div. Comprehensive 28-page manual covers nearly all phases of mercury vapor lamps. It contains the latest information on light output, life ratings, and electrical and physical characteristics. Among other areas covered are industrial lighting, street and floodlighting, and lighting of public buildings.

Machinery Mountings 475
Durant Tool Co. Informative 4-page brochure explains an inexpensive, easy method of mounting heavy machinery. The company's machine mountings are compared with other types in such areas as cost, noise, vibration, and ease of installation.

INDUSTRIAL HYGIENE

Air Sampling 476
Gelman Instrument Co. This four-page manual describes several methods of measuring airborne pathogenes and lists references for further information. Scientists, air pollution officials and plant safety personnel are becoming increasingly aware of the menace of airborne infections. Booklet attempts to popularize measurement techniques.

Oxygen Equipment 477
National Cylinder Gas Div. Well-illustrated booklet describes the company's line of portable resuscitators including "backpack" model which leaves the rescuer's hands free while aiding a victim; positive pressure breathing unit for industrial respiratory disorders; and oxygen piping systems for plant hospitals and first-aid areas.

FIRE PROTECTION

Marine Equipment 478
Ansul Chemical Co. This folder describes extinguishing apparatus for use on shipboard. The units, ranging from a 2½ pound model to 30 pound types. The dry chemical apparatus is approved by the U. S. Coast Guard. Also included is a chart of extinguisher selection in accordance with class of boat.

Fire Retardant Coatings 479
Flamort Chemical Co. Four-page brochure consists primarily of selection chart which lists the various flameproofing and retarding coatings and data covering their purpose, special features, application, coverage figures, and shipping information.

PERSONAL PROTECTIVE EQUIPMENT

Work Clothing 480
M. Setlow & Son, Inc. Multi-page catalog gives brief description and features of various items of clothing. Some types are chemical-resistant; others are flameproofed. The line includes pants, shirts, jackets, coveralls, aprons, laboratory coats, etc.

Glove Guide 481
Riegel Textile Sales. New selector manual covers basic types and styles of work gloves. The guide, abundantly illustrated, contains tips on many points such as grades of leather, chemical resistance and physical properties of various plastic coatings. Basic features of various materials are discussed. A second

(Continued on next page)

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Free Bulletins (Cont'd)

section contains on-the-job histories in which increased hand protection and lowered glove costs were achieved.

Eye-Face & Emergency Showers .. 482
Haws Drinking Faucet Co. Well-illustrated four-page catalog outlines several different eye and face wash fountains for emergency treatment for persons suffering contact with chemicals and other contaminated substances. Several types of emergency showers are also described.

Safety Belts 483
Mine Safety Appliances Co. A complete line of safety belts for worker protection is described in this bulletin. The eight-page illustrated brochure provides details on various types of web or leather belts, including body-type, harness-type, suspension-type, and linemen's belts and straps. Information is also given on lanyards, shock absorbers, and related equipment.

PLANT MAINTENANCE

Ready-To-Use Mortar 484
The Master Builders Co. This four-page bulletin explains and illustrates method for achieving tough, strong, non-shrink water-resistant joints and masonry repairs. Premixed mortar eliminates the need for selecting, assembling, proportioning and mixing ingredients. Comparative compressive strength test results are also included.

Maintenance Compounds 485
Fine Organics, Inc. This is an easy-to-use, pocket-size index of all the company's products. These include solvents, emulsion cleaners, general purpose cleaners, carbon removers, rust removers, polishes, various strippers, deodorants and disinfectants, etc.; a total of 78 in all.

Products Guide 486
S. C. Johnson & Son, Inc. Informative guide aids buyers of floor maintenance and cleaning supplies. Includes specifications and information on the performance characteristics of floor finishes, waxes, cleaners and specialized products. Recommended uses and testing methods are also discussed.

What's Your Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Readers Inquiry Card on the preceding page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it in on the Inquiry Card.

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	PERSONAL PROTECTION
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti-Fogging Equipment
104	Sweat Band
105	Hard Hats
106	Respirators & Masks
107	Protective Clothing
109	Safety Belts
110	Safety Gloves
112	Anti-Slip Soles
113	Oil-Resistant Soles
114	Welding Helmets
117	Safety Shoes
118	Safety Boots
119	Non-Slip Boots
	FIRST AID AND HYGIENE
122	Sanitary Drinking Facilities
124	Salt Tablets
126	Antiseptic Medication
127	Burn Medication
128	First Aid Kits & Supplies
129	Stretchers & Litters
129A	Stretcher Cases
130	Throat Medication
131	Eye Wash Fountains
131A	Emergency Showers
132	Portable Ventilators
133	Dust Collectors
135	Hearing Protectors
137	Noise Mufflers
138	Athlete's Foot Preventive
	FIRE PROTECTION
141	Safety Cans
142	Fire Alarms
146	Asbestos Textiles
148	Watchmen's Control Systems
149	Fire Blankets

Key Number	Subject
	LIGHTING AND WARNING DEVICES
150	Alarms & Warning Lights
153	Fluorescent Lamp Guards
154	Emergency Lights
155	Truck Back-Up Alarms
	MAINTENANCE
161	Anti-Slip Waxes & Finishes
162	Floor Cleaning Compounds
163	Floor Cleaning Machines
164	Floor Resurfacing Compounds
167	Insulating Tape
168	Ultrasonic Flaw-Detector
169	Machine Motion Analyzer
	LADDERS & HANDLING
170	Ladders
171	Ladder Safety Devices
172	Scaffolds
173	Work Platforms
174	Emergency Ladder Rungs
175	Safety Hooks
176	Folding Truck Steps
177	Carboy Pumps
	GUARDS
178	Machine Guards
179	Power Press Feeders
180	Safety Tools
181	Vacuum Sheet Lifters
182	Valve Operators
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U. S. and Canadian $4 (two years $6)
Foreign $5 (two years $8)
Single issues 50¢. Also quantity rates

Safety Maintenance

formerly "SAFETY ENGINEERING"

Volume 121, Number 2 **February, 1961**

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Cover picture by courtesy of Ethyl Corporation: Service engineer checks refinery storage tank equipment, as an aid to oil company in maintaining safe procedures for cleaning tanks that have held leaded gasoline.

AMERICA'S PIONEER INDUSTRIAL SAFETY MAGAZINE

Published monthly by Alfred M. Best Company, Inc. Publication Office, Columbia Turnpike, Box 232, Rensselaer, N. Y. Editorial and General Offices, Best Building, 75 Fulton Street, New York 38, N. Y. Second-Class Postage paid at Rensselaer, N. Y. Subscription rates: $4.00 Per Year in the United States; $4.00 in Canada; Foreign $5.00. Single Copies, 50 cents.
Postmaster: please send change-of-address notices to: Safety Maintenance, Best Building, 75 Fulton Street, New York 38, N. Y.

it's SAFE to say

● VOICE FROM THE THRONE

The controversy as to where to start in creating and maintaining safety interest is as constant as that affecting the age-old query of whether the chicken or the egg came first. Adherents of one theory will be found who loudly proclaim that the line foremen is the first approach to accident reduction; others are equally vocal in their conviction that safety interest must start at the top. We are inclined to go along with the latter premise for the reason that dedication to any pursuit does not spring full blown without some form of inspiration. Certainly it never will be maintained unless nurtured from above.

Naturally, the active interest and participation of the immediate supervisory staff are essential to the continuation of any accident prevention program just as they are necessary for quality control and output of the manufactured product. Nevertheless, the highest echelons from the President on down will need briefing in safety just as in any other phase of operations. In other words, a monotonous record of accidental injury often can be traced to what the Big Boss does NOT know!

A case in point is shown elsewhere in this issue in an article by George W. O'Neil of the internationally known Anaconda American Brass Company. Mr. O'Neil reports that his organization was so far at the bottom of his industry in accident-frequency figures that the only variation in the monthly reports submitted to him was the question of which of their company's plants would find itself in last place!

It is generally agreed that it is easier to start a brand-new safety program than it is to attempt to revive one that is dying on the vine. It soon became obvious to Mr. O'Neil that the highest officers of the executive staff of his company had to be told what was NOT going on and that in any war on accidental injury, the two most potent weapons consisted of communications and costs!

Once the renewed interest of top management was achieved, it had to be transmitted to the individual plant managers, and through them, to the foremen and hourly-paid employees. If the voice from the throne speaks authoritatively and often enough, the sound will permeate down the line and certainly will be taken seriously.

In his thought-provoking article, the author states that they had for accident reduction one ingredient in plentiful supply—many assurances from all plant managers that they were interested in safety and that their safety program was fully effective. Those assurances had little meaning in the face of lost time injuries to the extent of 400 a year and a rapidly climbing frequency rate. Small wonder when safety responsibility, in too many cases, was delegated to "a disinterested ineffective, or a former second-line foreman patiently awaiting retirement."

The situation became so serious that it was impossible to even discuss individual accidents with general foremen or plant managers because there were so many accidents. Separate details could not be recalled easily since records or written reports either were not kept at all or, at best, were mere sketchy outlines.

Obviously, the first target of communications was top management. They needed to be told that they could boast of the dubious distinction of being just about the worst safety performers in their entire industry. They were simply unaware of the fact that their safety record bore no relation whatever to their unexcelled standing in production facilities, quality, service and general business reputation.

According to Mr. O'Neil, if you have a Board Chairman, President, Executive Vice President and operations chief vehemently stressing accident reduction, you will be amazed at the safety interest manifested by the plant managers and general line foremen in their eagerness to grasp new methods introduced by the man charged with the grave responsibility of reducing accidental injury.

In the matter of costs, even the most recalcitrant management will be impressed by emphasizing that a lot of merchandise must be sold to obtain a net profit equal to the cost of preventable accidents in any one year. As is the case in any improvement program, get the story to the Big Brass—**loud and often!**

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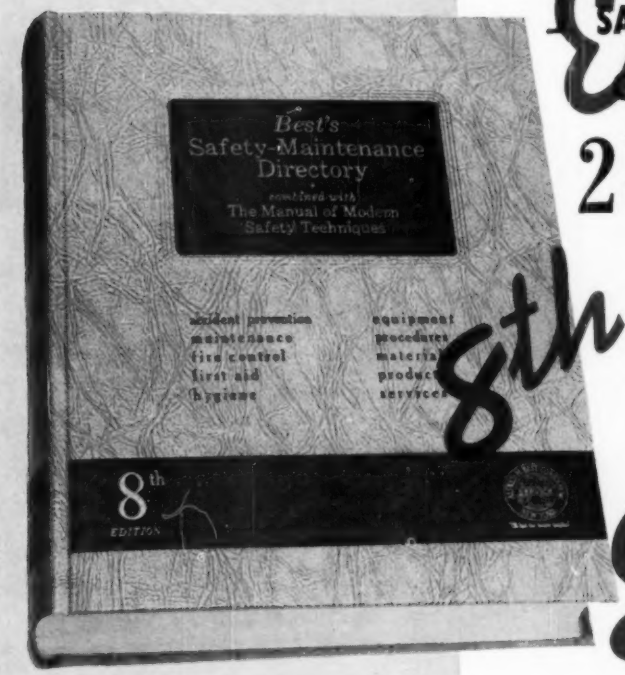

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Ninth Annual Miami Valley Safety Conference (Biltmore Hotel). Fred H. Lewis, Staff Director, Dayton Area Chamber of Commerce, Biltmore Hotel, Dayton 2, Ohio.

Los Angeles, Calif. *February 9–10*

Eleventh Annual Governor's Industrial Safety Conference (Biltmore Hotel, Los Angeles). Michael Flagg, Coordinator, 455 Golden Gate Ave., San Francisco, Calif.

Philadelphia, Pa. *March 1–2*

Twenty-Seventh Annual Regional Safety-Fire Conference and Exhibit (Bellevue-Stratford Hotel). Harry H. Verdier, Executive Director, Safety Council, Chamber of Commerce of Greater Philadelphia, 121 S. Broad St., Philadelphia 7, Pa.

Atlanta, Ga. *March 5–7*

Twenty-Second Annual Southern Safety Conference and Exposition (Atlanta Biltmore Hotel). W. L. Groth, Executive Director, P. O. Box 8927, Richmond 25, Va.

Fort Wayne, Ind. *March 14–15*

1961 Northeastern Indiana Safety Conference and Exhibit. Ivan A. Martin, Manager, Safety Council, Chamber of Commerce Bldg., Ft. Wayne, Ind.

Houston, Texas *March 26–29*

Twenty-Second Annual Texas Safety Conference & Exhibit (Rice Hotel). J. O. Musick, General Manager, Texas Safety Association, Inc., 830 Littlefield Bldg., Austin, Tex.

Los Angeles, Calif. *March 28–30*

Eighth Annual Western Safety Conference & Exhibits (Ambassador Hotel). Joseph M. Kaplan, Manager, Greater Los Angeles Chapter—National Safety Council, 3388 W. 8th St., Los Angeles 5, Calif.

Boston, Mass. *April 3–4*

Fortieth Annual Massachusetts Safety Conference and Exhibit (Hotel Statler Hilton). Bert Harmon, Manager, Massachusetts Safety Council, 54 Devonshire St., Boston 9, Mass.

Toronto, Ont. *April 10–11*

44th Annual Meeting & Safety Show of the Industrial Accident Prevention Associations (Royal York Hotel). R. G. D. Anderson, General Manager, Industrial Accident Prevention Associations, 90 Harbour St., Toronto 1, Ont.

New York, N. Y. *April 10–14*

Thirty-First Annual Greater New York Safety Convention and Exposition (Statler Hilton Hotel). William J. Farley, Convention Director, Greater New York Safety Council, 60 E. 42nd St., New York 17, N. Y.

Syracuse, N. Y. *May 1–3*

Central New York Safety Conference & Exhibit (Hotel Syracuse). Greater Syracuse Safety Council of the Syracuse Chamber of Commerce, Syracuse, N. Y.

Columbus, Ohio *May 2–4*

Thirty-First Annual All-Ohio Safety Congress & Exhibit (Deshler Hilton Hotel and Neil House). Arthur W. Moon, Congress Chairman, Ohio Division of Safety & Hygiene, 400 S. Front St., Columbus 15, Ohio.

Bethlehem, Pa. *May 8–10*

Thirty-Fourth Annual Eastern Pennsylvania Safety Conference (Hotel Bethlehem). Harold A. Seward, Secretary-Treas., Lehigh Valley Safety Council, 602 E. 3rd St., Bethlehem, Pa.

Durham, N. C. *May 10–12*

Thirty-First Annual North Carolina Statewide Industrial Safety Conference (Jack Tar Durham Hotel). H. S. Baucom, Director of Safety, North Carolina Industrial Commission, Raleigh, N. C.

Hartford, Conn. *June 13–14*

Sixteenth Annual Safety Conference and Exhibit of The Connecticut Safety Society (Statler Hilton Hotel). Charles A. Wooding, Conference Chairman, c/o Wallingford Steel Co., Wallingford, Conn.

Los Angeles, Calif. *July 18–20*

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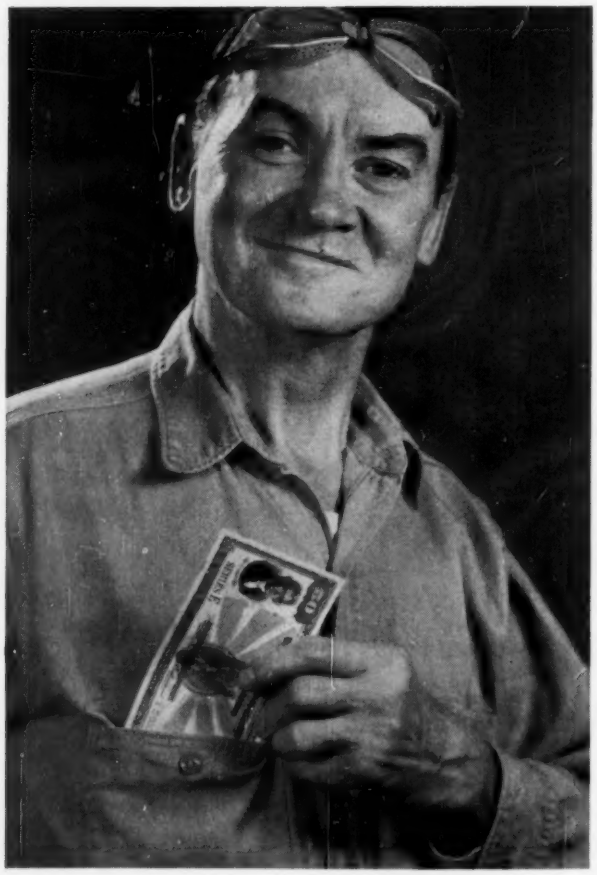

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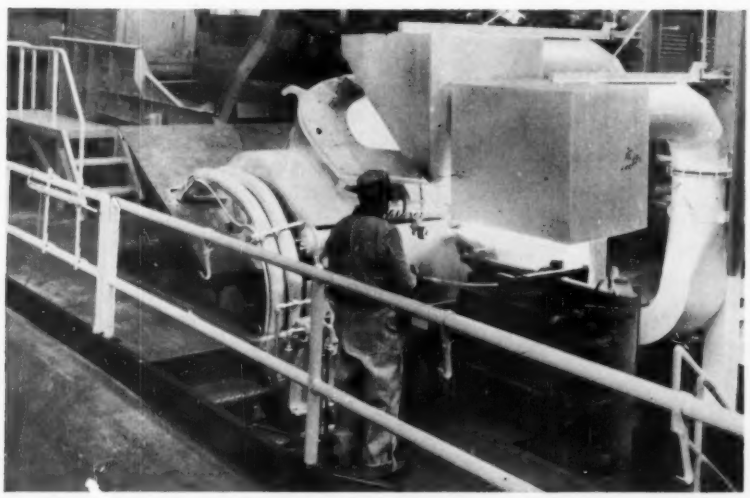
How to Create & Maintain Safety Interest

Alligator shear, capable of cutting heavy metal with an easy pass, is well guarded. Cross-piece, shifts for tubing.



Note cleanliness, orderliness of this Anaconda casting shop. Large furnaces tipped hydraulically, operator away from furnace and wearing safety glasses.

Chipping encrusted slag and metal from casting wall furnace was hot, hazardous before insulated platform was used.

by **GEORGE W. O'NEIL**
Administrator: Employee Communications & Safety
Anaconda American Brass Co.
Waterbury, Connecticut

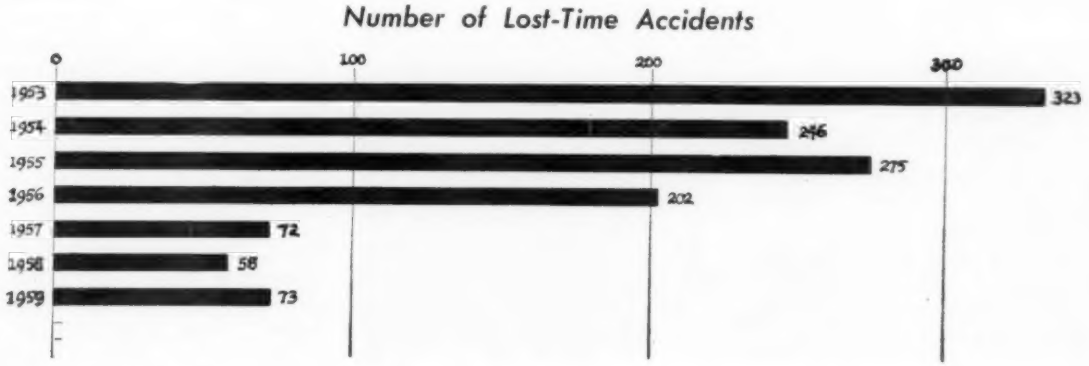
Over a period of years our company's safety record, at least up until 1956, ranked with the worst in our industry.

Our company is a multiple plant organization engaged in basic mill operations in non-ferrous metals, plus a limited amount of fabrication. Eight of our eleven installations are basic plants with largely heavy work involved. The Copper and Brass Research Organization's comparative accident-frequency figures regularly ranked our plants largely at the bottom. The one variation in the monthly reports I looked for was: *Which one of our plants would be in last place?*

There are many means and approaches to the problem of creating interest in safety; and once that safety interest has been achieved, countless methods for maintaining it have been attempted, with varying success. Since my background had been time study and industrial engineering, I was a neophyte in safety, having inherited the safety position on the death of the incumbent. My problem was how to revive a moribund safety program.

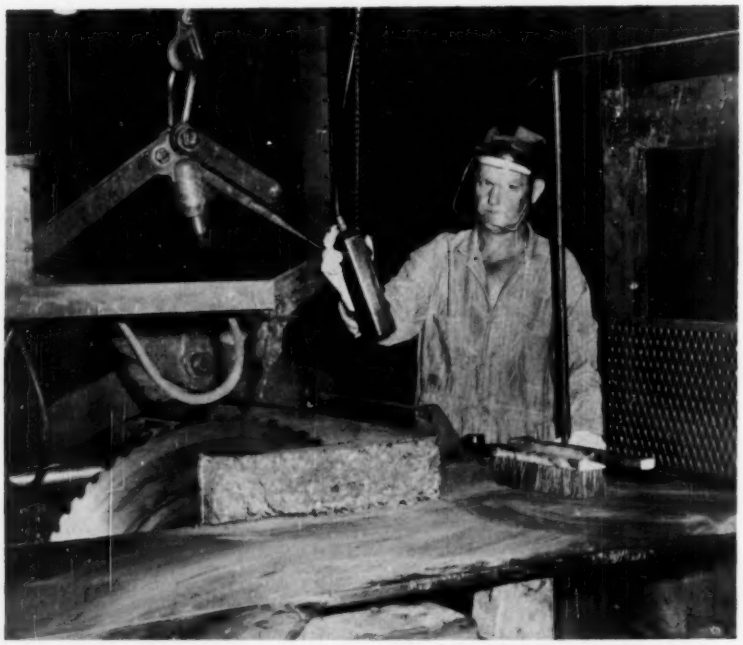
Facts Versus Fiction

First, it was obvious that the highest echelons of management had to become vitally interested in safety. Secondly, this renewed interest had to be transmitted to the individual Plant Managers and through them to the hourly employees. We had one ingredient in



full supply—many assurances from all the Plant Managements that they were interested in safety and that they did have an operating program that was extremely effective.

The facts did not bear this out. As a company, we were having lost-time accidents at the rate of over four hundred per year. The company's lost-time accident frequency rate was running around 14.00 and some of the largest divisions were hitting 19.00 and 20.00. In many instances the safety responsibility was being handled by either a disinterested ineffective, or a former second-line foreman patiently awaiting retirement. Further, it was impossible to discuss individual accidents with General Foremen or Plant Managers because there were so many accidents that separate details could not be recalled easily. Records or written descriptions were either not kept or, at best, were merely sketchy outlines.



Hot flying chips, dangerous to face, are produced in sawing gates from castings. Face shield, body screen shield worker.

To raise safety from the limbo of the virtually ignored, two principal weapons were utilized—**communications and costs.**

Top management people were the first targets of communications. They had to be alerted to their dubious distinction of being about the worst safety performers in the Brass Mill Industry. As the largest copper and brass fabricator in the country, our management took great pride in their productive facilities, quality, service and general business reputation.

Why then were they not exercised by the low rank of the company in the field of safety? Quite frankly, they were largely unaware of it. The Copper and Brass Research standings had not been brought to their attention. The mere fact that, although considered among the leaders in the industry in other aspects, we were last in safety, caused much consternation among our highest management people. At the level of Chairman of the Board, President, Executive Vice President, Vice President of Operation, the assurance was vehemently stressed that all the safety backing required would be forthcoming. Whereas this was not a complete blank check, it was what was needed to stir up Divisional Managers.

If you have the Board Chairman, President, and Vice President emphasizing safety on successive week visits and, as a safety man, you put in an appearance shortly thereafter, you will be amazed at the Plant Manager's interest in safety! You will find a brand new convert . . . a receptive audience that will be favorably inclined to new methods that you wish to introduce. Then is the time to inaugurate job hazard analysis, safety training, job physical requirements, new or improved inspections, accident investigation, improved priority for safety service orders, and all the other necessities that may have been "short stopped" by management apathy and disinterest. In brief, when you get the "head man" in your corner many things become possible. You have the Divisional Manager's interest.

Using Accident Costs As a Lever

To stimulate the local manager's enthusiasm even further, give him a simple comparison of costs of accidents charged to individual Divisions. These comparative figures, of course, can serve as a convenient reference point in discussions on safety between company executives and Divisional Management. For example, we use a simple set of charges which, at least after the first trial, we were able to develop without requiring complex Accounting Department assistance. These costs are all non-fixed charges due to both Lost Time and non-Lost Time Accidents. It is all based on **extra** money expended due to accidents. These charges do not contain any costs which would be present whether we have or do not have accidents. If we have one accident or five hundred, we still have to pay for nurses, attendants, salaried doctors, heat, light, physical equipment and other fixed expenses. These charges are not included.

But the costs we are interested in for comparison purposes are those directly attributable to specific accidents within a calendar year. Therefore, an analysis which was made of costs between three Divisions, all within thirty miles of each other, revealed a startling variation. These locations operated under the same Compensation and Labor Laws. They had virtually the same number of people, practically the same type of work and about the same ethnic backgrounds in workers. The indirect accident

costs at the three locations for 1958 were as follows:

Division #1–	**$1,806.00**
Division #2–	**$1,989.00**
Division #3–	**$62,000.00**

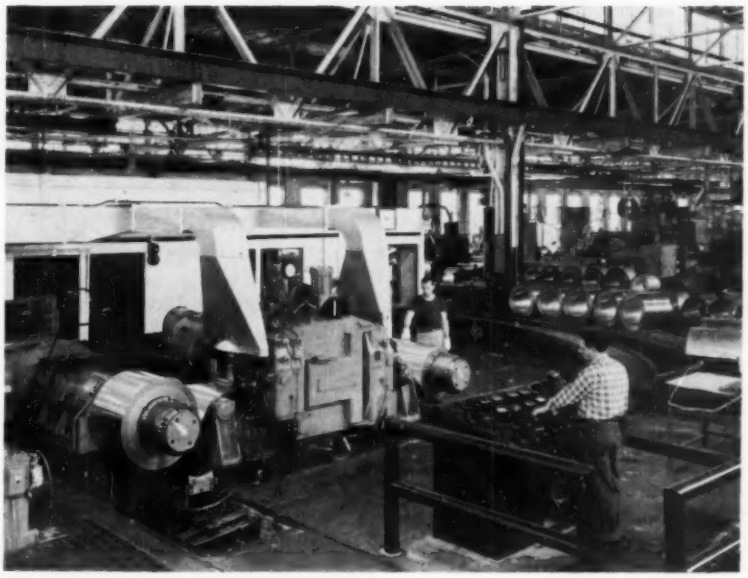
When these figures were shown to the Plant Manager of Division #3 he was astounded and somewhat dismayed. He was all too well aware of how much of his product would have to be sold to make that kind of money. He knew what new, necessary machinery $62,000.00 would buy. In short, he became a real safety convert. The proof of this statement is found in the 1959 figures for this same high cost Division. That year they spent $11,000.00 on their accidents. **A $50,000 saving through safety is impressive enough to maintain any interest you generate.**

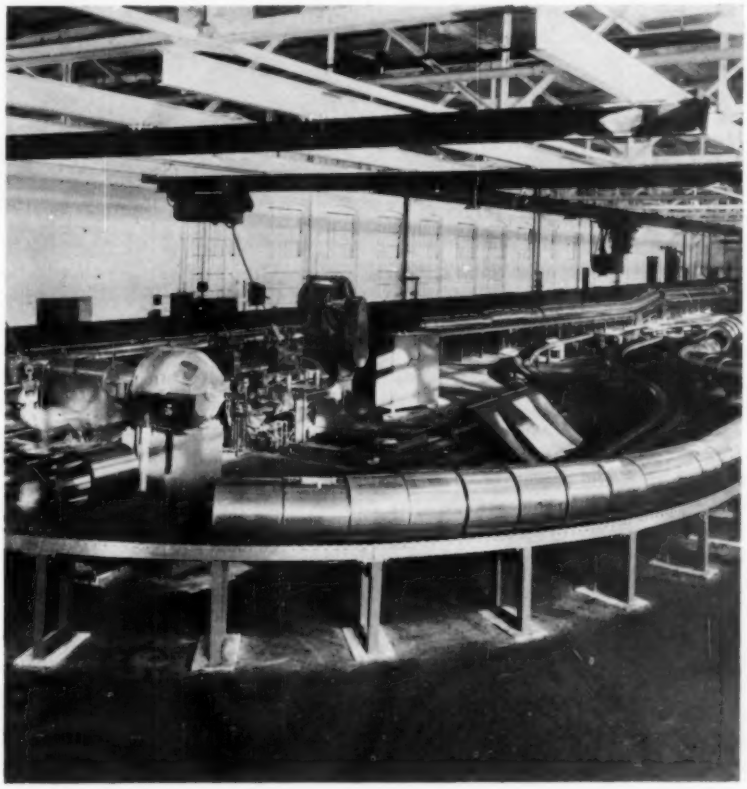
Now having looked at two simple approaches to engendering interest (1) enlisting top management backing, and (2) using costs as a lever, we can assume that your Divisional Works or Plant Manager is interested. His attitude will necessarily color the viewpoint of the Superintendents and Line Foremen. They in turn will display safety interest that is bound to rub off on individual workmen. But there are many communications methods that can be employed to foster and sustain safety consciousness. We have used virtually all of them. Our newsboards have been regularly and periodically subjected to a virtual barrage of safety material. Pictures of 'near misses,' shattered eyeglasses, damaged safety shoe toe caps, contest standings by Division and Department, local newspaper stories on our Plant Safety successes and many others.

Due to a large standing prejudice against safety contests involving money or elaborate prizes, we have usually avoided this approach except wherein local managements have been particularly anxious to try this. The objections were not based on a reluctance to spend money because we have spent heavily on safety and with good results. But our management felt that there was something inherently faulty with our program if we had to pay a man to be safe. Originally, in searching for any means to stop the blood letting in our industrial accidents, I did not agree with this but we seem to have been able to effect marked improvement without cash payments.

However, we do give away a lot of safety shoes for achievement in safety. We have bought a great many elaborate dinners to honor

(Continued on page 14)





ABOVE AND BELOW Scenes shown here typify good housekeeping practices which are followed consistently at basic mills of Anaconda American Brass Co.

TIPS ON SANITATION

General cleaning is an area of building maintenance where much time can be lost or much time saved, depending on the efficiency of the work force and of the materials used. It is therefore important that the work be properly organized and the right materials used to accomplish the job most efficiently and at the lowest cost. The following guides to specific areas of plant sanitation are presented as practical suggestions for effective maintenance.

Washing Walls and Ceilings

A. Assemble equipment. Two pails and two sponges are recommended. One pail and sponge can be used for the cleaning solution and the other for the rinse water.

B. Dust the area to be cleaned in order to remove any cobwebs or loose dirt.

C. The ceiling is usually washed first so that any splashes or drippings will not dirty an already clean wall.

D. Most operators find it easy to wash an area of 9 square feet at a time. This is usually a comfortable reach for the operator as well as being small enough to rinse before the cleaning solution has had time to dry and cause streaks.

E. The washing process itself consists of four steps:

1. The Initial Wash—**Mix a detergent solution, following exactly the directions or recommendations of the detergent manufacturer. Dip the cleaning sponge into the solution, wring sufficiently so the sponge will not drip, and apply to the surface to be cleaned in a circular motion. Rub as necessary to loosen dirt.**

2. The Pick-Up of the Solution—**The cleaning sponge should be dipped into the cleaning solution, wrung dry and used to pick up the excess cleaning solution on the wall or ceiling.**

3. The Rinse—**Clean rinse water is necessary, as the wall may be streaked if dirty water is used. The excess water should be squeezed from the rinse sponge and the wall should be rinsed thoroughly.**

4. The Pick-Up of the Rinse Water—**The rinse sponge should be dipped into the water again, wrung dry, and used to complete the rinse by picking up the remaining water.**

F. There are two schools of thought regarding the proper method of washing a wall. In one, the washing is done from the top down; in the other, the washing is done from the bottom up. Choose the method that you find makes it easier to avoid streaking.

Washroom Cleaning

Nowhere is regular, systematic cleaning more important than in the washroom. Use an effective cleaner-disinfectant for cleaning of all surfaces—walls, floors, ceilings, woodwork, wash bowls, urinals, and toilets. If surfaces are clean and germ-free, there will be no need for heavy cover-up disinfectants.

For systematic organization of each washroom cleaning job, follow these four basic steps:

1. **Empty all receptacles:**
   a. **Waste receptacles.**
   b. **Sanitary napkin receptacles.**
   c. **Sand urn.**
2. **Check and refill all dispensers:**

   As you are checking dispensers, wipe the surfaces clean with a cloth dampened in a cleaner-disinfectant solution.
   a. **Towel dispensers.**
   b. **Toilet tissue dispensers.**
   c. **Seat cover dispensers.**
   d. **Soap dispensers.**
   e. **Sanitary napkin dispensers.**
3. **Clean all surfaces:**
   a. **Light fixtures. Replace burned-out bulbs and wash exterior of fixture.**
   b. **Partitions. Run a cloth**

TECHNIQUES

dampened with a cleaner-disinfectant across the top of all partitions.

c. Drain pipes. Pour drain pipe cleaner down drain of each sink periodically. Let the chemical work while you continue your cleaning.

d. Windows. (See following section on "Window Cleaning.")

e. Walls. Spot clean frequently to remove dirt marks. Wash walls periodically with a cleaner-disinfectant.

f. Mirrors. Wipe off smudge marks or clean completely. If fogging of mirrors is a problem, clean with an anti-fog type of polish.

g. Sinks. Use a cleaner-disinfectant undiluted or a good cleansing powder to remove heavy soil. Rinse and wipe dry. Be sure to clean fixtures as well as bowl.

h. Hardware. Periodically clean hardware and pipes, especially those under the sink.

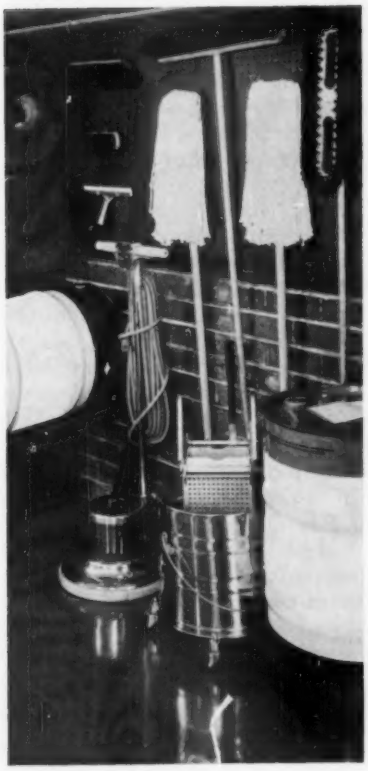
i. Toilet seat. Use a sponge dipped in a moderately strong solution of cleaner-disinfectant. Clean both top and bottom of seats. Rinse with clean sponge or cloth. Leave seat up.

j. Toilet bowl. Use a bowl cleaner to remove all stain marks. Use a brush as necessary. Pay particular attention to the area under the rim of the bowl.

k. Floors. Mop the entire area with a germicidal solution of a cleaner-disinfectant diluted according to the manufacturer's directions. Give special attention to areas around toilets and urinals. Always work toward the door so you will not track the freshly cleaned floor.

Offensive odors in lavatories quite often come from bacteria in the grouting around ceramic tile. Thorough and regular cleaning with a cleaner-disinfectant is needed to remove and destroy the odor-producing bacteria.

4. Inspect.



SANITATION SERIES
other articles Jan. & March

Window Cleaning

Cleaning windows normally means just removing a film which often can be done with clean water. Under certain conditions such as those found in restaurants, garages and other places subjected to smoke and grease, the use of a good window cleaner will greatly speed the removal of smoke films, grease films, and flyspecks.

Windows should not be cleaned in the sun as they will dry too quickly, leaving streaks. When washing windows, begin with the outside of the pane and follow with the inside.

1. Dip sponge or brush into cleaning solution and shake surplus liquid into pail.

2. Apply wet sponge or brush to surface of window, working up and down and across glass to remove and loosen dirt.

3. Remove liquid and loosened dirt with squeegee or clean chamois, following a systematic pattern from top to bottom of each pane. When using a chamois, turn and rinse frequently; when using a squeegee, wipe with sponge or cloth between strokes.

Care of Equipment

Good equipment is necessary to do a good job of building maintenance. And good equipment deserves to be well cared for. Here are a few rules which, if followed, will help keep your equipment al-

ways in good shape, always ready to do the best kind of job for you.

1. Rinse out mops immediately after using.

2. Hang up mops to dry.

3. Label separate mops: "CLEANER" – "RINSE" – "WAX." Do not interchange.

4. Rinse out mop buckets and vacs after each use.

5. Periodically comb out lint and thread from push brooms.

6. Don't store push brooms on bristles. Hang up.

7. Change sweeping cloths or dust mop heads frequently.

8. Keep floor machines and vacs clean—wiping off after each use.

9. Always remove brushes from floor machines before storing. Hang up brushes.

Pictures by courtesy of Johnson's Wax.

Lighting Exposition

With "Lighting for Today and Tomorrow" as the over-all theme for the 3rd National Lighting Exposition, this industry-wide trade show which takes place in New York's Coliseum, March 5–8th, looms as one of the major events in the lighting industry of this or any year. Not only will the industry be given the opportunity to display and to see the latest in lighting equipment but the World Lighting Forum, a series of nine panel symposiums planned by an Honorary Committee of Lighting Experts, should prove to be an educational program of invaluable aid to the entire industry.

These symposiums were planned by the committee not only for the manufacturer, the contractor and the wholesaler, but for all the buying influences involved, in every phase of this $600 million industry. They will enlist the services of the top lighting minds both in America and abroad, extending its coverage for the first time to the international field.

There is no registration fee to attend the National Lighting Exposition, but there will be a $2.00 registration charge for each of the symposiums. However, if all nine are desired, the fee will be $13.50 for the series. A check or money order specifically stating which symposiums you desire to attend should be sent to National Lighting Exposition headquarters, 477 Madison Avenue, New York 22, N. Y., and the same reserved seat will be held for you for whatever symposiums you so designate.

The symposiums which will discuss such vitally new topics in lighting as "The Integration of Lighting," "Heating and Air Conditioning" as well as explore the findings of international lighting experts, will also concentrate heavily on relighting in all its phases, covering street and highway, residential offices, factories, institutions, etc.

Attendance to the show itself is by invitation only, with all facets of the lighting industry and its allied fields represented. At least 200 manufacturers will present over 250 exhibits—many on view for the first time.

The 3rd National Lighting Exposition and World Lighting Forum will be sponsored by LLEMSA (Lighting, Lamps and Electrical Manufacturers Salesman's Association, Inc.

Second Quarter Injury Rates Unchanged

The injury-frequency rate in manufacturing held unchanged during the second quarter of 1960, according to a preliminary report by the U. S. Department of Labor's Bureau of Labor Statistics.

The second quarter average—11.1 disabling injuries per million man-hours worked—was the same as that for the first quarter of 1960 and the fourth quarter of 1959. It was 5 percent below the 1959 second quarter but 6 percent above 1958, when the second quarter rate (10.5) was the lowest ever recorded.

The average for the first 6 months of 1960 was also 11.1. This was 3 percent below the average for the first half of 1959, but 6 percent above the comparable 1958 figure.

Among 138 individual manufacturing classifications for which frequency rates are available for the first half of both 1959 and 1960, only 3 recorded outstanding decreases in 1960. The rate dropped from 30.1 to 22.6 for boat-building and repairing, from 39.3 to 33.2 for poultry dressing and packing, and from 9.7 to 4.3 for paving and roofing materials. In 40 other industries, there were decreases of 1 to 5 points. On the other hand, the rate for the wooden container industry rose from 29.1 to 35.1 and smaller increases were reported in 31 other industries.

A total of 20 industries recorded strikingly low injury-frequency rates—less than 5 injuries per million man-hours worked—during the first 6 months of 1960. Some of the lowest rate industries were: Synthetic rubber—1.4; radio tubes—2.2; aircraft—2.2; electrical equipment for vehicles—2.3; electric lamps (bulbs)—2.4; miscellaneous communication equipment—2.5.

Safety Interest

(from page 11)

groups and award impressive cast bronze plaques for outstanding safety accomplishment.

There have been those who have felt we have had too much "Safety" on our Newsboards. My feeling is that you **can't** have too much safety, and there is solid evidence that it is read extensively. Basically, with Newsboards—outdoor billboards—indoor illuminated postings—we have safety in front of someone in our mills as much as possible. It's bound to rub off on some person at some time during the day whether he is aware of it or not.

We even get much mileage out of publicizing accidents of other Divisions or even other companies than our own. Our mill men have asked for the details of an accident or fatality occurring in a competing concern fifty miles away. We are convinced the Safety material is being read widely, and we recommend it over the objections of the "too much" school of thought.

In conclusion, let me summarize by saying you can only create safety interest by enlisting your highest level of management in support of your efforts; and constant communications, designed to keep safety in front of your mill people, will sustain interest at the plant level.

From an address presented at the 30th Greater New York Safety Convention.

Pictures by courtesy of Anaconda American Brass Co.

Fig. 1. Good battery performance and long life are results of good maintenance practices, such as regular cleaning.

Fig. 2. To remove heavy accumulations of dirt and grease, steam is used. Worker is wearing acid-resistant overalls.

SAFETY CHECK LIST FOR BATTERIES

by **ROBERT W. HOPEWELL**
Manager—Field Engineering
Gould-National Batteries, Inc.
Trenton, N. J.

Observe these simple, common sense suggestions when working around storage batteries to prevent injuries to personnel and damage to batteries and equipment.

DO	WHY
1. Keep open flames away from storage batteries—do not check electrolyte level with a cigarette lighter or match. USE AN EXPLOSION-PROOF FLASHLIGHT OR PROVIDE ADEQUATE PERMANENT LIGHTS.	*Hydrogen may be entrapped in the battery. A flame may cause an explosion that could crack the battery jars or covers. Electrolyte may spray on a worker, causing serious injury.*
2. Shut off the power when changing or repairing plugs or receptacles that are connected to the charging equipment. This will prevent a possible short circuit and arcing.	*A short circuit may injure a workman and may cause explosion and fire.*
3. Before removing the terminal lugs from the receptacle, when repairing a damaged or dirty plug or receptacle connected to a battery, the battery circuit should be opened or "broken."	*The leads which terminate in the receptacle are live or "hot" with the total voltage of the battery existing across the terminals. If the terminal lugs are accidentally touched together a short circuit or arcing will occur. The amperage carried may reach 10,000 amperes and may exceed the current carrying capacity of the leads.*
4. On electric trucks, disconnect the battery from the truck when doing maintenance and repair work on the motor or electrical system.	*Live current may cause arcing or short circuit with damage to equipment or injury to the worker.*
5. Never lay metal tools such as wrenches on top of a battery.	*Sparking and short circuiting will occur and the battery will be damaged.*

Fig. 3. Charging area for electric trucks is enclosed by steel wire partition. Racks keep charging leads off floor.

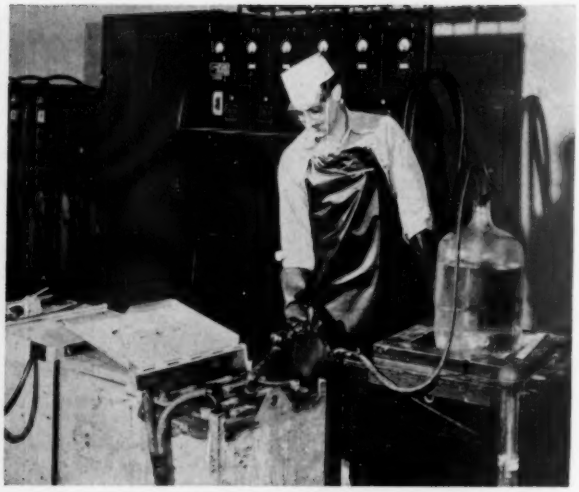
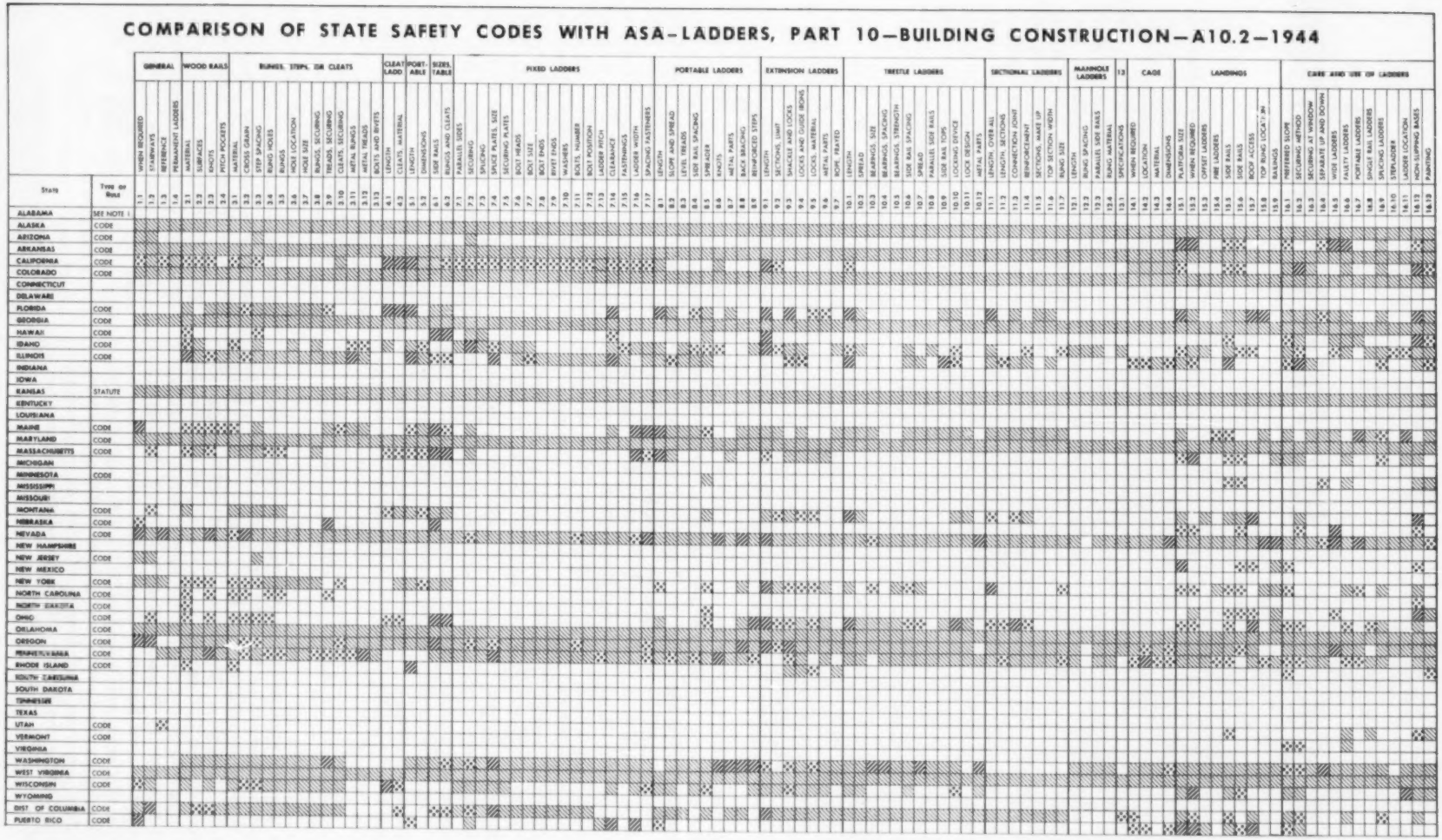


Fig. 4. Portable table bearing distilled water, hydrometer, cell filler, other tools was developed by Kraft Food plant.

DO	WHY
6. Enclose all bare wires and bus bars in the battery room by fence guards, guard rails or other means, to isolate from general plant traffic. (See Figure 3.)	*Exposed high current transmission equipment is a possible hazard to workmen and plant.*
7. Wear rubber apron, gloves, boots and goggles . . . when handling, checking, filling, charging or repairing batteries. (See Figure 4.)	*For protection against accidental spillage of electrolyte—a mixture of sulphuric acid and water.*
8. Have water readily available when electrolyte has been accidentally splashed on skin or clothing. Extreme care should be taken in flushing electrolyte from the eye. Use plain water only and call a doctor immediately.	*Volumes of water applied quickly, continuously and copiously will prevent serious injury to the skin. Quick medical attention is necessary to assure proper care and treatment.*
9. Apply strong alkali such as baking soda when acid is spilled on the floor and clean up promptly.	*Alkali will neutralize the acid and make it safe to clean or flush from the floor.*
10. Take proper care in melting the sealing compound when preparing to seal a battery. Avoid puncturing the hard surface of a partially melted compound with a screw driver or other sharp tool. DO NOT ALLOW COMPOUND TO IGNITE BY TOO RAPID HEATING.	*The hot liquid may squirt up and burn hands, face or body of a workman. If it should catch fire it creates the hazard of an open flame, Burning consumes oil in the compound and impairs its useful characteristics.*
11. Remove vent caps from nearby cells and blow out each cell to remove gas when preparing to reassemble a repaired cell into the battery. Cover the vent holes with layers of damp cloth before using lead burning equipment on the intercell connectors in order to integrate the cell into the battery circuit. Also use dark glasses to protect the eyes.	*Either carbon lead burning equipment or an acetylene torch is normally used and both are hot enough to cause hydrogen to explode, if present. This is a real hazard and should be recognized at all times. Harmful light rays and molten metal will have harmful effect upon the worker's eyes.*
12. Wear protective clothing and goggles when mixing acid and water. . . . Always **add acid to water** and stir constantly to mix well. Always store acid in lead or glass containers.	*If water should be added to high specific gravity acid, considerable heat and violent reaction occur, possibly splashing the handler. Effects of splashed acid are dangerous.*

(Continued on page 42)

COMPARISON OF STATE SAFETY CODES WITH ASA–LADDERS, PART 10—BUILDING CONSTRUCTION—A10.2—1944



LEGEND

- Same as or very similar to ASA
- More restrictive than ASA Standards
- Less restrictive than ASA Standards
- No Code or Standard

U. S. Department of Labor
Bureau of Labor Standards
Division of Safety

DEFINITIONS

CODE—A provision promulgated by a state having the force and effect of law.
STATUTE—A provision enacted by state legislation.

NOTE

1. Alabama recommends AGC Manual of Accident Prevention in Construction as approved by ASA.

How to Use Respiratory Equipment

For the safe use of any device, it is essential that the user be properly instructed in its selection, use, and maintenance. This is particularly important in respect to respirators. Competent persons should give such instruction to the supervisors of all groups who may be required to wear respirators at their work. The supervisors, in turn, should instruct their men. No person should be allowed to wear a respirator of any type until he has received such instruction. Such instruction should cover:

1. An explanation of the need for using the respirator.

2. Its operating principle.

3. Steps to be taken to assure that it is in good operating condition.

4. Proper adjustment of the respirator to the wearer.

5. Proper use and maintenance of the respirator.

The very presence of self-contained breathing apparatus, hose masks with blowers, or gas masks on the property of any organization is an indication that they are expected to be used in an emergency situation or in one that is dangerous to life. All persons who may have occasion to use these respirators, or cause them to be used, should be properly trained in their use before circumstances require that they use them to protect their lives and the property of their employer. In addition to this, efforts should be made to foresee possible emergencies and plans of action should be formulated so that when respiratory protection is needed, rescue or repair operations will proceed smoothly and safely.

Merely talking about such respirators as the self-contained apparatus, the hose mask with blower, and the gas mask is not enough. The men should be given an opportunity to handle the respirator, have it fitted to them properly, test the gastightness of the facepiece fit, wear it in normal air for a period long enough for them to become familiar with it, and, finally, they should actually wear it in an irrespirable atmosphere. Such an atmosphere may be created by burning a half-ounce formaldehyde candle in a room of about 4,000 cubic foot capacity. Not only would this atmosphere be irrespirable, but it would be irritating to the eyes. This atmosphere is similar to that used by the Bureau of Mines in the training of men in the use of self-contained breathing apparatus. After a person has worn one of these devices for a prolonged period in this formaldehyde-air mixture without any ill effect, he need only remove the facepiece or nose clip momentarily to be convinced of the efficacy of the respirator. Such training breeds confidence in the trainees that should stand them in good stead in an emergency situation.

A less severe training atmosphere that can be built up in any room without damage to its contents, or to other people in the same building, may be prepared by vaporizing isoamyl acetate to the amount of 173 cubic centimeters per 1,000 cubic capacity of the room. The liquid isoamyl acetate is vaporized from a cloth wick placed in front of a fan in the room. This produces a concentration of about 1,000 parts of isoamyl acetate per million parts of air (0.1 percent) by volume. If the odor of isoamyl acetate is detected by a person wearing an emergency-type respirator, he would be able to detect the odor of phosgene or chlorine if he entered a 2-percent concentration of either of these gases while wearing the device. Isoamyl acetate vapor in this concentration is used by the Bureau of Mines as a preliminary means of testing the gastightness of gas-mask facepieces before actually wearing them in highly toxic concentrations of gases.

Knowing the correct way to use respiratory protection equipment is vital—probably more so than for any other type of protective device. A small oversight . . . a slight misuse . . . can lead to tragedy and too often does. The following material is designed as a guide to the safe use and care of various kinds of respiratory equipment, as shown in the *American Standard Safety Code for Head, Eye, and Respiratory Protection*, sponsored by the Department of the Navy, National Bureau of Standards, and U. S. Bureau of Mines. Copies of the complete code (Z2.1-1959), including information on the selection and use of safety hats and caps, helmets, face shields, safety eyewear and lenses as well as respirators, are available for $3.00 from the American Standards Association, Inc., 10 East 40th St., New York 16, N. Y.

Precautions in Using Respiratory Equipment

Respirators are used to supplement other methods of control of airborne contaminants rather than to substitute for them. Every effort should be made to prevent the dissemination of contaminants into the breathing zones of the workers. In some instances, it is necessary to use respirators only until these control measures have been taken; in others, such measures are impracticable, and the continued use of respirators is necessary. Following are the precautions to be taken in

Safely

the use of various types of respiratory devices.

Self-Contained Breathing Apparatus

(1) The wearer of a self-contained breathing apparatus should be physically sound and fit and should be thoroughly trained in the construction, testing, use, care, and limitations of the apparatus before he attempts to wear such apparatus in a hazardous situation.

(2) Make certain that the self-contained breathing apparatus is in good operating condition.

(3) Make certain that the apparatus is capable of supplying air or oxygen for the period that the wearer must remain in the contaminated area.

(4) Adjust the apparatus to the wearer and test for tightness according to the manufacturer's instructions.

(5) If the wearer is to enter a confined space containing an atmosphere that is extremely hazardous, connect a strong life line to his body. This will serve (a) as a means of guiding him to the exit; (b) as a means of transmitting prearranged signals between him and the men at the fresh-air base; and (c) as a means of aiding in rescue operations in case of an accident or emergency. This life line should be held by two attendants, at least one of whom is wearing a similar apparatus.

(6) Enter the contaminated area cautiously, and, if the contaminant is detected by odor, taste, or eye, nose, or throat irritation, return to fresh air immediately and ascertain the cause.

(7) Bear in mind the time limitations of the apparatus and allow an adequate margin of time for the return to fresh air.

(8) The mouthpiece and nose clip, or the facepiece, should not be removed until the wearer is certain that he is in respirable air.

Gas Masks

(1) Make certain that the gas mask is in good operating condition.

(2) Adjust the canister harness on the body so that, when the facepiece is put on, there is some slack in the breathing tube when the wearer's head is in the normal position.

(3) Adjust the facepiece to make a gastight fit on the wearer's face. There are two means of testing a facepiece for a gastight fit: (a) Close off the exhalation valve and exhale gently into the facepiece. If a slight positive pressure can be built up in the facepiece without any indication of outward leakage of air between the facepiece and the face, it is adjusted properly. (b) Close off the breathing tube, inhale so that the facepiece starts to collapse, and hold the breath for about ten seconds. If the facepiece stays in its partially collapsed condition and no inward leakage of air is detected, it is adjusted properly.

(4) Test the complete gas mask for gastightness by closing off the air-intake at the bottom of the canister, either with the palm of the hand or with the bottom canister seal, and inhaling as in (3)(b) above.

This test checks the gastightness of the canister or timer gaskets and of the connection between the breathing tube and the canister or timer.

(5) Make certain that the contaminated atmosphere is not deficient in oxygen.

(6) Enter the contaminated area cautiously. If the odor of the contaminant is noted, return to fresh air immediately and ascertain the cause of the leakage.

(7) Make certain that the canister has enough residual life to give respiratory protection for the period that the wearer expects to be in the contaminated area. It is good practice to attach a fresh canister to the mask before entering an extremely hazardous atmosphere, especially one containing a gas that

has poor warning properties, such as methyl bromide.

(8) The facepiece should not be removed or fresh canisters attached until the wearer is certain that he is in respirable air.

(9) After leaving the contaminated area, replace the bottom seal on the canister to prevent deterioration of the canister contents. This is particularly important in the case of universal gas-mask canisters.

(10) Where the contaminant is a single gas or vapor, or a mixture of two or more gases or vapors of the same type, longer service time will be obtained if a canister is used that is designed especially for protection against the contaminant than would be obtained if a universal gas-mask canister were used. Firemen generally use the universal gas-mask canister because they are never certain what gases they might encounter.

Hose Masks With Blower

(1) Make certain that the hose mask is in good operating condition.

(2) Set the blower in an assured source of respirable air.

(3) Connect the proper length of hose (not over 150 feet) to the blower and to the facepiece, making sure that all gaskets are in place and that the connections are tight. Where more than one hose line is to be used, each should originate at the blower.

(4) Before entering a confined space such as a tank or sewer containing an atmosphere that is extremely hazardous, connect a strong life line to the D-ring of the body harness. This life line should be held by two attendants so that the wearer can be removed from the contaminated atmosphere in case of accident or emergency.

(5) Operate the blower for a minute or two at a rapid rate to blow any dust out of the hose and to make sure that air is being delivered to the facepiece.

(6) Adjust the body harness securely to the wearer.

(7) Adjust the facepiece to the wearer so that it makes a gastight fit with his face. There are two means of testing for a satisfactory facepiece fit: (a) Close off the exhalation valve and exhale gently into the facepiece. If a slight positive pressure can be built up in the facepiece without any indication of outward leakage of air between the facepiece and the face, it is adjusted properly. (b) Close off the breathing tube or tubes, inhale so that the facepiece starts to collapse, and hold the breath for about 10 seconds. If the facepiece stays in its partially collapsed condition and no inward leakage of air is detected, it is adjusted properly.

(8) Operate the blower, and adjust the flow of air to the wearer's satisfaction. The blower should be operated continuously during the use of the mask.

(9) Check on the prearranged signals between the wearer and the blower operator.

(10) Enter the contaminated area cautiously.

(11) Be careful that the hose is not endangered by sharp edges or falling objects, and remember that the wearer must retrace his steps and leave by the same route that he entered.

(12) If the continuous flow of air to the facepiece is interrupted, the wearer should return to fresh air and ascertain the cause.

(13) The facepiece should not be removed until the wearer is certain that he is in respirable air.

Hose Masks Without Blower

(1) Make certain that the hose mask is in good operating condition.

(2) Securely fasten the air-intake of the respirator in an assured source of respirable air.

(3) Connect the proper length of hose (not over 75 feet) to the air-intake and to the facepiece, making sure that all gaskets are in place and that the connections are tight.

(4) Adjust the body harness to the wearer.

(5) Adjust the facepiece to the wearer so that it makes a gastight fit with his face.

There are two means of testing for a satisfactory facepiece fit: (a) Close off the exhalation valve and exhale gently into the facepiece. If a slight positive pressure can be built up in the facepiece without any indication of outward leakage of air between the facepiece and the face, it is adjusted properly. (b) Close off the breathing tube, inhale so that the facepiece starts to collapse, and hold the breath for about 10 seconds. If the facepiece stays in its partially collapsed condition and no inward leakage of air is detected, it is adjusted properly and is gastight.

(6) Make certain that the atmosphere to be entered is not so hazardous that the wearer cannot escape unharmed without the aid of the respirator.

(7) Enter the contaminated area cautiously and leave by same route.

Air-Line Respirators

(1) Make certain that the air supply is respirable. Close attention should be paid to the location of the intake to the air-supply device to make certain that the entering air is not contaminated. A suitable filter should be provided to remove objectionable odors, oil and water mist, and rust particles from the air delivered to the air-supply line. A suitable reducing-type or demand-type valve and an excess-pressure relief valve should also be provided. For supplying respirable air, the use of low-pressure externally lubricated blowers is preferable to high-pressure internally lubricated compressors, since the latter may add objectionable odors to the air and may produce carbon monoxide upon overheating. Internally lubricated compressors should be equipped with an automatic shut-off which is actuated if they become overheated.

(2) Make certain that the air-line respirator is in good operating condition.

(3) Attach the proper length of air-supply hose to the source of compressed air and to the breathing tube.

(4) Adjust the pressure of the air at the inlet to the air-supply hose so that it is within the proper pressure range.

(5) Adjust the facepiece, helmet, or hood to the wearer according to the manufacturer's instructions. A full facepiece or half-mask facepiece should be adjusted so that all the excess air leaves the facepiece through the exhalation valve and

none is felt leaking out under the edge of the facepiece.

(6) When the rate of flow of air into the facepiece, helmet, or hood seems to be excessive, the wearer may decrease the flow of air by means of the air-regulating valve with which most air-line respirators are equipped. However, to prevent the contaminant in the surrounding air from reaching the wearer's breathing zone, the flow of air should not be decreased below 4 cubic feet per minute for facepieces, or below 6 cubic feet per minute for helmets or hoods. Hence, the air-regulating valve should be used judiciously on an air-line respirator.

(7) Enter the contaminated area cautiously and leave by the same route.

(8) Each air-line respirator is equipped with a quick-acting detachable coupling by means of which the wearer can quickly disconnect the respirator from the air-supply line to facilitate escape in an emergency such as fire. The wearer should practice using this coupling before wearing the respirator in a contaminated atmosphere.

Abrasive-Blasting Respirators. The precautions to be taken in the use of an abrasive-blasting respirator are the same as those given for the air-line respirator, with the following additional precautions.

(1) Make certain that the shatterproof eyepiece and the protective cover glass (if furnished) are in place. Under no circumstances should regular window glass be used in place of the shatterproof eyepiece. Clean the inner and outer surfaces of all eyepieces.

(2) Make certain that the protective wire screen or perforated-metal eyepiece is clean and in place.

Chemical-Cartridge Respirators

(1) Make certain that the atmosphere to be entered is not immediately dangerous to life.

(2) Make certain that the respirator is in good operating condition, that the gaskets are in place, and that the proper chemical cartridges are securely mounted in the respirator.

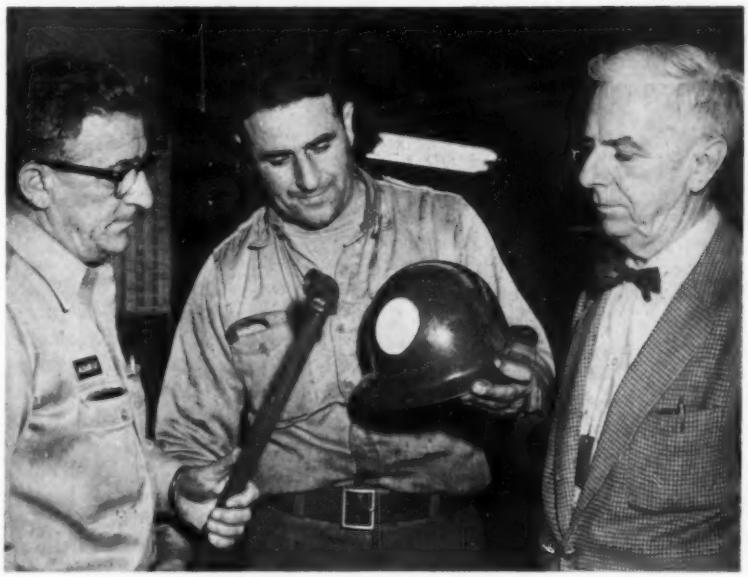
(3) Adjust the respirator to the wearer's face so that it makes a gastight fit with his face. There are two means of testing for a gastight fit: (a) Close off the exhalation valve and exhale gently into the facepiece. If a slight positive pressure can be built up in the facepiece without any indication of outward leakage of air between the facepiece and the face, it is adjusted properly. (b) Close off the inlets to the facepiece by cardboard discs or stoppers usually furnished by the manufacturer, inhale so that the facepiece starts to collapse, and hold the breath for about 10 seconds. If the facepiece remains in its partially collapsed condition and no inward leakage of air is detected, it is adjusted properly. If the second method is used, the cardboard discs or stoppers must be removed and the cartridges assembled with the facepiece without disturbing the fit of the facepiece on the wearer's face.

(4) Enter the contaminated area cautiously.

(5) When leakage of the contaminant is noted by the wearer, he should discard the used cartridges and replace them with fresh ones.

(6) Knitted cotton cloth must never be used to cover the face-contacting edges of chemical-car-

Another Injury Checked



Hard Hat Saves Life

Luck was with Amedeo Angelillio, structural ironworker rigger in the Engineer Division of the U. S. Army Transportation Terminal Command Atlantic at Brooklyn Army Terminal, when the safety helmet he was wearing absorbed a swinging blow from a steel sprinkler pipe. Angelillio is grateful that the scuff mark was left on the helmet—there was no dent in his head.

The accident happened recently when Angelillio was 20 feet aloft on Pier 2. He was on a scaffold repairing a cargo door. A gear snapped, causing the door to unfurl (similar to the sudden rolling up of a window shade) and knock the end of the sprinkler pipe against Angelillio's helmeted head. He kept his balance and suffered only a slight headache from the jar, with no loss of time from his job.

In the picture, Angelillio (center) shows his supervisor, R. Domenick Albanese (left) the dent (indicated by the white circle) in the safety helmet that saved his life. John McErnerney, Safety Coordinator for the Engineering Division at the Terminal, looks on.

tridge respirators, since the cloth cover is not gastight.

Dispersoid (Dust, Mist, or Fume) Respirators

(1) Make certain that the respirator is in good operating condition and that the proper filters are securely fastened in place.

(2) Adjust the respirator to the wearer's face so that it makes a dust-tight fit with his face. There are two means of testing for a satisfactory facepiece fit: (a) Close off the exhalation valve and exhale gently into the facepiece. If a slight positive pressure can be built up in the facepiece without any indication of outward leakage of air between the facepiece and the face, it is adjusted properly. (b) Close off the inlets to the facepiece by cardboard discs or stoppers usually furnished by the manufacturer, inhale so that the facepiece starts to collapse, and hold the breath for about 10 seconds. If the facepiece remains in its partially collapsed condition, and no inward leakage of air is detected, it is adjusted properly. If the second method is used, the cardboard discs or stoppers must be removed and the filters assembled with the facepiece without disturbing the fit of the facepiece on the wearer's face.

(3) As the total amount of solid particulate matter removed from the inspired air by the filter increases, the resistance to inhalation increases and finally reaches a value such that the wearer is conscious of increased difficulty in breathing. At this time, disposable-type filters should be discarded and replaced by fresh filters, and re-cleanable-type filters should be cleaned in accordance with the manufacturer's instruction. Under no circumstances should respirator filters be washed or dry cleaned.

(4) In atmospheres containing particulate matter that is irritating to the skin, or where excessive perspiration may occur, a knitted cotton cloth, furnished by the manufacturer, may be used over the edge of the facepiece to prevent contact between the rubber portion of the facepiece and the wearer's face. This must not be used on fume respirators.

(5) When the facepiece is removed, the wearer may obtain visual evidence of the dust-tightness of the facepiece fit by looking at his reflection in a mirror and noting the presence or absence of dust streaks on that portion of his face that was covered by the facepiece.

Maintenance of Respiratory Equipment

It is especially important that respirators be properly maintained and stored. The life of the wearer may be dependent on their proper functioning and ready availability. Adequate attention to cleaning and disinfecting is also required because the respiratory inlet coverings are worn on the face. Whenever possible, a centralized maintenance, cleaning, and storage station should be established to care for equipment of this type. It should be equipped adequately and manned by trained personnel.

Procedures Applicable to All Respirators

Inspection. All respirators should be inspected at regular intervals to make sure that they are ready for use. For respirators that are used and maintained daily, inspection becomes a rather automatic function; however, it is often neglected for respirators that are stored throughout a plant for use in emergency situations. These devices should be checked as regularly as fire extinguishers; as a matter of fact, it is good practice to integrate these inspection and maintenance programs.

All rubber parts such as facepieces, mouthpieces, exhalation valves, breathing tubes, and headbands should be inspected carefully for signs of deterioration such as hardening, checking, or tackiness. During the inspection, time should be given to "working" the rubber between the fingers with a stretching and massaging action. This will reveal defects in rubber parts and prolong the life of nondefective parts.

A check should be made to see that all gaskets are present and that they are held in place tightly.

Metal parts should be checked for signs of corrosion, and plastic and glass parts for breakage.

Maintenance. When it is necessary to replace worn or deteriorated parts, only those made specifically for the device should be used and the repair work should be accomplished by experienced personnel. Makeshift repairs for respiratory protective equipment cannot be tolerated. After equipment that is used frequently is cleaned and disinfected, it should be repaired routinely; emergency equipment should be repaired immediately after inspection reveals the need for repairs.

Repairs to intricate parts should not be attempted unless adequate facilities and trained personnel are available. For most users, it is preferable that parts of this type be replaced as a unit or returned to the manuacturer for repair.

Cleaning and Disinfecting. Respiratory protective equipment should be cleaned and disinfected after each use. However, because of the wide variety of materials used in these devices, the manufacturer should be consulted for the cleaning and disinfecting method best suited to his products.

In general, facepieces and mouthpieces for respiratory protective devices are made from rubber or rubber-like compounds. Usually, these can be cleaned with detergent and lukewarm water by hand-brushing or agitation in a washing machine. Formaldehyde, modified phenolics, hypochlorite, or quaternary ammonium compounds in the proper strength can be used to disinfect the parts. Normally all detergent is rinsed from the protective device before disinfecting; however, there are several combination cleaning and disinfecting materials available in both liquid and powder form which contain a detergent and quaternary ammonium salts and this permits combining the washing and disinfecting operations. After cleaning and disinfecting, the parts should be rinsed in clean water and dried quickly for most disinfectants. It may not be desirable to rinse parts treated with quaternary ammonium compounds since their disinfectant properties will continue indefinitely and may not produce a skin irritation. After reassembly,

the device should be placed in a clean and dust-tight container.

Hot water, steam, solvents, and ultraviolet light should be avoided in the cleaning and disinfecting of rubber parts because all have deteriorating effects. If paint or other difficult-to-remove substances are encountered, it is preferable that they be removed by mild caustic cleaners rather than by solvents.

Storage. All types of respirators should be stored in clean and dry compartments under conditions of moderate temperature. Most devices of this type are received in reusable cartons or cases and should be kept in these containers during the period of storage. Exposure to heat, sunlight, extreme cold, and excessive moisture is harmful to respiratory protective devices if the exposure continues over extended periods.

In some cases, it is necessary to locate respiratory protective devices at convenient stations throughout the work area for ready availability in the event of an emergency. Special care must be taken to insure adequate storage under these conditions. In some instances, it is necessary to construct special compartments to protect the equipment from the process materials as well as from the elements.

Additional emergency-type respiratory protective devices should be stored just outside the immediate danger area so that men can retreat to them and don them for judicious re-entry into the contaminated area to carry out rescue or repair operations.

No respirator can be adequately stored outside its carrying case or carton in a tool box or clothing locker.

Special Maintenance Procedures

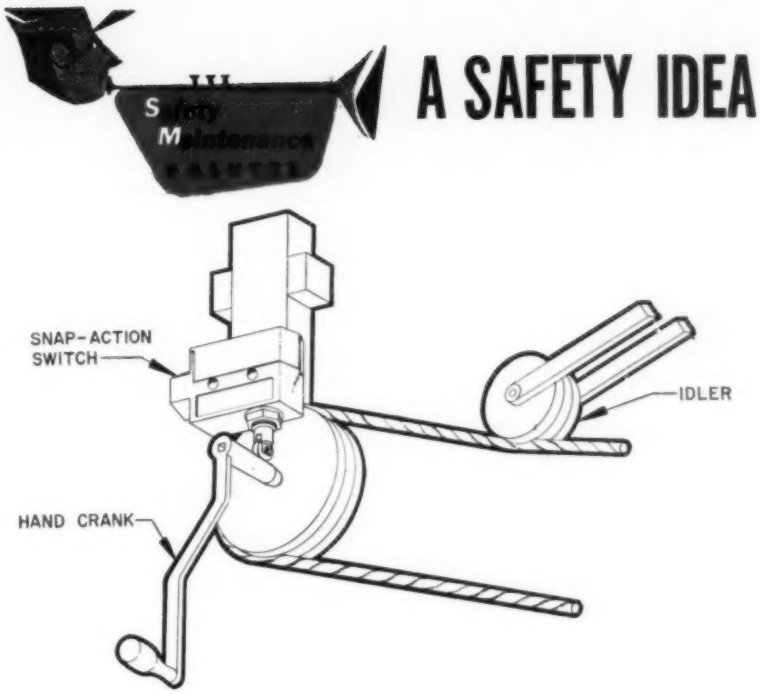
Self-Contained Breathing Apparatus. In compressed-oxygen recirculating apparatus, make sure the carbon dioxide removing chemical is replaced after use and that the oxygen cylinder is refilled to rated capacity in order to insure full service life. The cylinder pressure should be checked periodically and brought to rated pressure if necessary. The tightness of the high pressure and low pressure sides of the apparatus should be checked periodically following the manufacturer's instructions. In self-generating apparatus, periodic tightness tests as outlined by the manufacturer should be followed.

Hose Masks. Check the blower periodically for proper operation. Check hose for wear and tear after each use and steam clean when necessary. Keeping hose capped when not in use will prevent entrance of dust or other contaminants.

Air-Line Respirators. The facepiece should be serviced after each use just as for all other respiratory protective equipment. The flow-control valves should be inspected after each use and cleaned and repaired if necessary. Chemical cartridges in the continuous-flow control-valve assemblies should be changed when necessary. Air-line hose should be checked for wear and tear after each use and be steam cleaned when necessary.

The air-supply system should be inspected routinely to insure continued proper functioning. Air compressors, air-cylinder manifold systems, pressure reducers, pressure-release valves, air-line filters, air-line instrumentation, and permanent piping and outlet fittings must be kept in good repair to assure satisfactory condition of the air reaching the breathing zone of the wearer.

Gas Masks. Check the facepiece to be sure that (1) the eyepieces are not broken and that they are



Flying Crank Is Grounded

To safeguard workers in a cordage manufacturing plant, Crossley Davy of Ontario, Canada, devised a method of keeping a handle crank from becoming an unguided missile. The hand crank is used to turn the roll head on a manila drawing frame while untangling fouled rope. After the jam has been cleared, the operator might leave the crank on the shaft while starting the machine again, causing it to spin off at high speed and thus endangering all workers within range. To eliminate this hazard, a normally-closed snap-action switch is installed as a safety interlock in the motor circuit to make the machine inoperative until the crank is removed.

By courtesy of MICRO SWITCH's "Micro Tips."

held firmly in place; (2) the rubber portion of the facepiece is flexible and free from cracks; (3) the head harness is flexible and that the straps and buckles are in good condition; (4) the exhalation valve is in place, works freely, and has no dirt on its contact surfaces; (5) the breathing tube is flexible and free from cuts and that it is securely fastened to the canister neck or to the outlet of the timer; (6) the canister is of the proper type, is free from dents and rust spots, and is securely attached to the canister harness. If a timer is used, check to be sure that the gaskets are in place and are making proper contact, and that the timer is reset when a new canister is attached. Universal gas-mask canisters should be replaced after one year from date of breaking seal if not exhausted before this time. Canisters should be stored in a cool, clean, dry location and the stock rotated so that no canister remains in storage for more than four years before it is used.

Self-Rescuers. Frequent inspection is the most important phase of the maintenance program with this type of equipment because the equipment is seldom used but must always be ready. The type which offers protection against carbon monoxide utilizes hopcalite in the chemical fill and must be protected from moisture to remain effective. Follow the manufacturer's recommendations for checking the moisture seal at regular and frequent intervals.

Dispersoid and Chemical-Cartridge Respirators. Mechanical filters of the "throw-away" type should be discarded when the breathing resistance becomes bothersome to the wearer. In most plants with centralized maintenance stations, the filters are destroyed and discarded at the time the respirator is serviced.

Some respirators employ recleanable filters, in which case the filters are cleaned when the respirator is being serviced.

Chemical cartridges should be changed when the wearer detects the odor or irritating effect of the contaminant. In plants with centralized maintenance stations, cartridges are sometimes discarded after a given period of use (based on group experience), but in most cases the wearer is responsible for discarding and replacing cartridges in his respirator.

Particular care should be exercised in the storage of chemical cartridges because they usually deteriorate if exposed to excess moisture and to gaseous air contaminants. Cartridges should not be stored in the area where it is necessary for the workmen to use chemical-cartridge respirators.

Picture by courtesy of E. I. du Pont de Nemours & Co., Inc.

Clean Eyewear Campaign

At a Press Preview in New York City, the Guild of Prescription Opticians of America, Inc., the professional organization for over 2,000 opticians, launched a public service program, the theme of which is "Clean Your Eyeglasses Once a Day."

Present were representatives from safety, news, womens' and fashion magazines and columnists from leading newspapers, whose readers are among the 83,000,000 people in the United States who wear glasses. William Heimlich, President of the Guild talked briefly about the "importance of keeping eyewear clean for the sake of safety, health and good grooming too—on the road, on the job and in the home" and pointed out that the slogan "Clean Your Eyeglasses Once a Day," by calling attention to the necessity of keeping eyeglasses clean, will lead to an awareness of other phases of eye care.

Concurrently, with articles and news releases on safety, health and beauty of clean eyewear, the Guild is acquainting the public with the role of the opticians and the symbol of the Guild as their guarantee of the best in service, stressing skill, style, quality, workmanship and aftercare, and encouraging readers to take their next eyeglass prescription to a Guild optician.

Examination Stressed

The Better Vision Institute, representing optical manufacturers and the eye care professions, is also promoting the need for eye examination with advertisements highlighting the need for eye examination. A nation of people who "see well and look well" is the aim of both programs.

Pictures by courtesy of Guild of Prescription Opticians of America, Inc.

YOUR EYES DESERVE THE BEST: To look well, see well, and stay safe, glasses for visual correction or for safety should be kept sparkling clean . . . and readjusted if they begin to slip down or if the frames become the least bit bent through handling and usage.

COLD WEATHER MAINTENANCE

Cold weather conditions create additional service problems for almost all types of heavy, outdoor equipment. Caterpillar Tractor Co. reports there are five general areas that require extra special consideration for winter operations **—lubrication, cooling system, starting system, fuel system and electrical system.** These same areas must also be cared for if storage is planned.

Lubrication

With temperatures in the lower ranges, lighter weight oils must be used. At below freezing temperatures, the engine crankcases should be filled with SAE No. 10 crankcase oils. The lower viscosity oil permits easier cranking of the engine and is fluid enough to freely circulate during the warm-up period.

During periods of extremely cold weather, or in climates of constantly very low temperatures, it may be necessary to dilute the oil with kerosene in order to provide sufficient viscosity. When temperatures rise somewhat, however, the diluted oil should be drained and the crankcase refilled with undiluted oil, since too-thin oil will not give proper lubrication in warmer weather.

Lubricant used for bearings must also be changed to a lighter grade for cold weather, with No. 1 or No. 0 normally the most successful.

A grade of at least No. 80 transmission oil is recommended by Caterpillar when temperatures drop below freezing. As with the crankcase oils, it may be necessary to thin this oil with kerosene during extremely cold weather periods. Again, however, the oil should be changed when warmer temperatures return.

While of great importance during warm months, lubrication of the track and carrier rollers becomes even more important in cold weather operations. Except for "lifetime lubricated" rollers, which require no field lubrication, it is generally necessary to switch to lighter grades of lubricants during sub-zero weather. In some instances it may be necessary to use oils in place of grease. The ability of the standard grease gun to handle the grease outdoors is a good general guide as to when it is time to change to lighter grades, or switch to a crank case or transmission-type lube oil. Track-type tractors equipped with "lifetime lubricated" rollers or idlers in good condition do not require refilling even in the coldest weather since they are filled with a low viscosity lubricant during factory assembly. They are refilled only at the time of rebuilding.

Starting

For machines equipped with gasoline starting engines, cold weather starting normally presents little difficulty, IF both the gasoline and diesel engine are in good shape and the necessary precautions regarding lubricants have been observed.

Diesel engines depending on either electric or air starting systems, however, are sometimes difficult to start without some additional help in temperatures generally below 50 degrees F. The solution in these instances generally is to use additional external heat, such as a manifold air heater or other starting aids. In extreme situations, such as Arctic conditions, it often becomes necessary to heat the crankcase with a torch or some other form of high heat.

Cooling System

In cold weather the car owner puts anti-freeze solutions in his auto. The same care applies to earthmoving and construction

equipment engines. With diesel engines, it is advisable to use permanent-type anti-freeze solutions because of their higher operating temperatures.

Although some operators prefer to use water only as a coolant and drain the block and radiator at the end of each day, it is a risky business. Failure to drain out the water just one time can result in expensive damage to the engine.

While considering the possible damage caused by water freezing in a diesel engine, it should be kept in mind that the fuel system can also turn up trouble because of water. The best means of keeping water out of the fuel system is to prevent condensation inside the fuel tank. This is possible by filling the tank completely at the end of the workday. This pushes out the moisture-laden air. Also, much of the water that still gets into the system can be eliminated by draining off a small amount of fuel each morning, if the fuel filter housing has a sump which traps any remaining water carried in the fuel. During cold weather the fuel filter housing should be drained at regular, short intervals to prevent accumulated water from freezing and possibly cracking the housing.

Other points to be considered for cold weather operation are: the type of fuel used, the general condition of the electrical system and the care given the battery. For sub-zero operation, a fuel having an unusually low pour point should be used to insure proper flow of fuel from the tank to the fuel transfer pump. These are often called "winter grade" fuels and are available in most cold areas.

The entire electrical system should be checked over . . . especially the starting engine magneto. For units fitted with direct electric starting only, particular attention should also be given to the battery. This should be tested frequently and charged whenever the charge drops below standard in order to insure sufficient power for starting. A discharged battery should never be exposed to freezing temperatures as the electrolyte can easily freeze, causing the battery case to break.

A strong battery is especially important in cold weather since a battery's "cranking ability" drops quickly in cold weather and at the same time, the "drag" or inherent engine resistance increases rapidly. This means the battery has less energy to do a more difficult job.

Air Cleaner

Oil bath type air cleaners should receive even more careful attention during cold weather. As temperatures drop, oil in the air cleaner cup may have to be changed to SAE 10 weight in order to be carried up into the screens. If the oil does not reach and coat the screens, the efficiency of the cleaner drops considerably.

When equipment is operated in blowing snow, the air cleaner should be checked frequently since the cleaner or its inlet may be plugged quickly.

Dry type air cleaners require no special attention in winter operation other than frequent checks against plugged inlets.

Picture by courtesy of Caterpillar Tractor Co.

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A New Look at the—

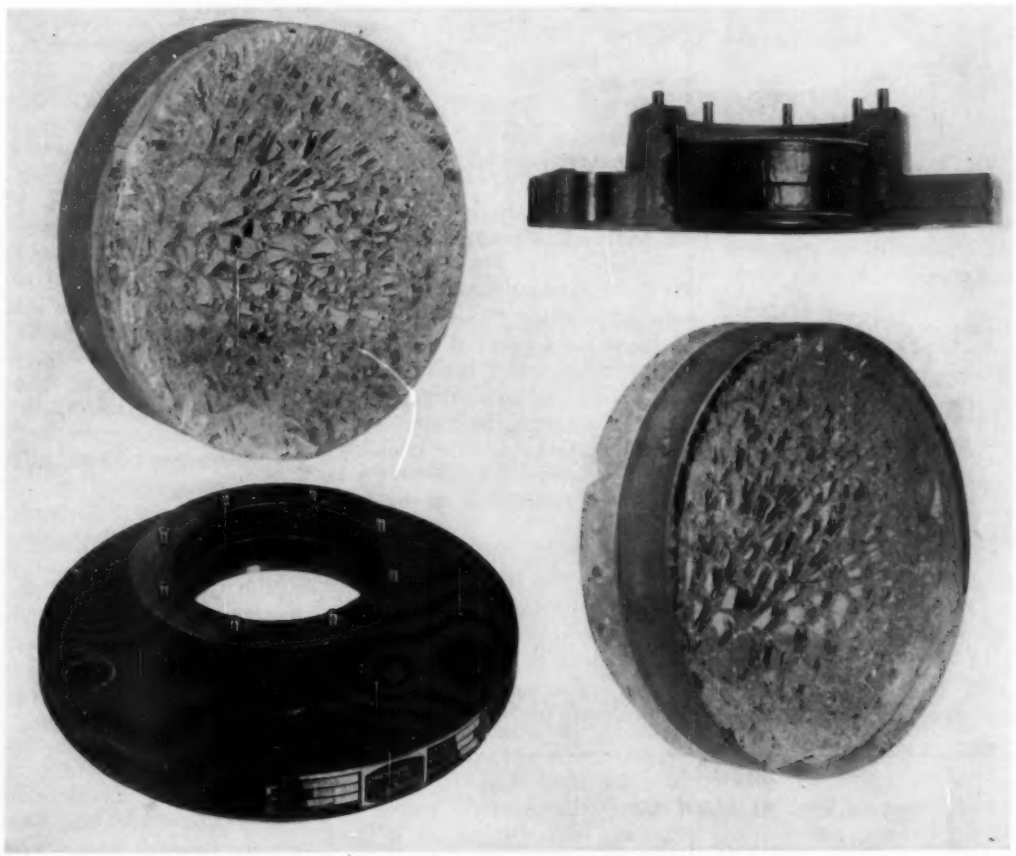
SIGHT - GLASS PROBLEM

Sight-glass failure is one of industry's more costly in-plant safety problems. Failures of the unpredictable control cost industry millions of dollars in terms of losses incurred through destruction of equipment, materials, production and even human life.

The United States Department of Vital Statistics lists 47 deaths directly caused by pressure vessel failures in 1958, the last reporting period. Not tabulated, however, are the industry-wide losses caused by resulting fires and explosions.

Sight-glasses are used in those manufacturing processes where

(Continued on page 28)



New sight-glass safety features are illustrated in the above composite photograph.

Top Left: A front view of a fractured patented lens that prevented an in-plant accident which could have cost chemical company $250,000. Fool-proof mounting of the control, plus its secondary internal lens, prevented blow-out or rupture of the unit even after fracture.

Top Right: A cutaway view of packing and assembly of new safety-sight glass. Unique mounting accommodates pressures, temperatures which sight-glasses must contain. Compressing the circumference of lens assembly, it eliminates the possibility of rupture or blow-out destruction of control by directing equal stresses against the glass.

Design and manufacture of unit makes it practically impossible to fail through blow-out or rupture so common in conventional models.

Bottom Left: A standard model of new sight-glass with carbon steel base containing a four-inch lens assembly. Though a wide range of models is available to meet specific applications, this model is built to specifications of 150 psi.

Bottom Right: A rear view of safety-sight glass lens shown at top left. Undamaged, this secondary lens, plus its type of mounting, held maximum operating pressures until detection of surface damage could be noted by employees. Even with both the lenses fractured, however, the design of control would still protect against blow-out or rupture.

Each lens contains tested safety factor of 10 or is capable of holding 10 times the normal operating capacity for which it has been specified.

Sight-Glass Problem
(from page 27)

chemical reactions of certain expensive and dangerous materials must be studied under high pressures and temperatures. Before the advent of a recently developed unit, sight-glasses were considered one of industry's most worrisome safety problems.

The new control virtually eliminates the possibility of lens blow-outs or ruptures in sight-glasses. Over 1,000 of the controls have been in test and use for two years. Not a single lens destruction has been reported.

The new device features a unique mounting design for the special glass lens. According to company and independent laboratory reports, it operates safely in applications ranging from ultra-high vacuum to pressures of 30,000 pounds per square inch.

Conventional glasses working under similar conditions represent a potential projectile in plant working areas. A regular four-inch diameter glass, working under the comparatively low pressure of 150 pounds, actually is containing a total blow-out force of 1800 pounds.

Coupling high pressures with high temperatures and the inherently brittle nature of glass, it is impossible to detect stresses and danger signs in the lens. Also, it is impossible to anticipate further punishment possible through human error or accident.

The new control meets the rigors of pressure, temperature and impact, according to tests made over the past two years. Early last year, final "severe situations" tests were given the control by corporate and independent laboratories. The device was subjected to punishments of abnormal pressures ten times normal operating capacity; sudden temperature changes from hot to cold, and concentrated impacts.

Findings of the laboratories were reported: "Performance of the unit was outstanding under all test conditions."

In the high pressure phase of final testing, only slight surrounding gasket extrusion was reported after abnormal pressure was held for an extended period of time. No rupture occurred.

To anticipate the most abusive treatment possible to the specially treated lens, steel balls were dropped on its face from heights of eight feet. Instead of the blow-out expected in conventional glasses, only a partial fracturing of the surface lens occurred. The interior safety glass remained intact. No leakage was detected.

As an additional precaution, the company has fool-proofed the control. It is pre-tested for two times the specified operating capacities at the factory before shipment. Arriving at the plant ready for assembly, no experienced supervision is needed in installation of the control.

The sight-glass has a minimum safety factor of 10 and is as versatile as it is durable. It can be adapted to present or new equipment—special or standard. A variety of lens arrangements make it applicable in processes using acids. Colored glass discs shield against intense light and non-browning glass is available for use with radioactive materials.

The control currently is enjoying a widening use in the chemical, petroleum and petro-chemical industries. However, a growing use for it is developing in domestic industries such as aviation, food-processing, paint and pharmaceuticals.

A source for further information about the new sight-glass can be obtained upon inquiry to the editors.

Pictures by courtesy of PresSure Products Co.

Sight-Glass Accident Case Histories

Recently, a cracked conventional sight-glass allowed 750 gallons of vinyl chloride to escape inside a building. Both fire and explosion followed, causing losses estimated at $200,000. Direct cause of the accident was the cracking of the sight-glass under pressure. Undetectable stresses in its surface were brought about by uneven tightening of the control to the vessel. Increasing pressure magnified these stresses and caused blow-out without warning.

Two other recent incidents resulting in combined losses of nearly half a million dollars were caused by slight gouging of the conventional model sight-glass lenses during normal cleaning operations. So minute were the marks, they went undetected under inspection.

When the vessels were put into operation under pressure, however, the weaknesses resulted in fire and explosion in each case.

Advisory Committees Appointed for NBS

Two new Technical Advisory Committees have been established by the National Bureau of Standards, U. S. Department of Commerce.

The committees include leaders in specialized fields, drawn from industry. The purpose of the committees is to aid the Bureau in cooperating with industry in the fields of precision measurement, calibration, and standard practices. William Wildhack, Special Assistant to the NBS Director, is Chairman of both committees.

The Advisory Committee on Calibration and Measurement Services will advise the Bureau concerning current and anticipated needs of industry for measurements and calibration services, facilitating an understanding of the extent and relative urgency of these needs and suggesting how the Bureau's skills and resources may best be utilized toward meeting them.

The Advisory Committee on Engineering and Related Standards will concern itself with national needs for such standards as codes, specifications, standard test methods, and standard data on the properties of engineering materials; maintaining awareness of the efforts of private organizations in these areas; fostering cooperative programs and recommending uses of the Bureau's special competence for the development and application of engineering and related standards.

THE FIRE FRONT

Fire Prevention Code

Publication of the 1960 edition of the Fire Prevention Code, incorporating changes and additions to bring it up to date, was announced recently by the National Board of Fire Underwriters. This is a revision of the 1956 edition of the Code, which was first published in 1930.

The Fire Prevention Code is a set of regulations recommended for adoption as law to provide communities with the power to enforce correction of fire hazards. The Code prescribes regulations governing conditions hazardous to life and property from fire, and provides a suggested ordinance under which a municipality may adopt a Fire Prevention Code and establish a bureau of fire prevention.

The Code is so worded as to make it readily adaptable for quick adoption. Many communities adopt the Code by reference, using a brief "adopting ordinance" such as the model one appended to the Fire Prevention Code. More than 1,600 communities throughout the country have either adopted some edition of the Code, or have a Code based largely on one of these editions.

Cause of Fires

"The death and destruction daily occurring from fire and explosion is the result of a combination of circumstances," said Everett W. Fowler, chief engineer of the National Board.

"A common contributing factor is the improper handling and use of flammable and explosive commodities.

"For instance, improper location and venting of tanks at a bulk plant for flammable liquids has resulted in fire, and injury to firemen.

"Liberation of gas in a faulty piping system has brought about fire and explosion.

"Reaction of certain chemicals in a manufacturing process not properly controlled has destroyed plants.

November Losses Rise

Estimated fire losses in the United States during November amounted to $84,340,000, the National Board of Fire Underwriters has reported. This loss represents an increase of 7.3 percent over losses of $78,582,000 reported for November, 1959, and a decrease of 9 percent from losses of $92,730,000 for last October.

Losses for the first 11 months of 1960 now total $1,005,921,000, an increase of 5.8 percent over the first 11 months of 1959, when they amounted to $950,629,000. These estimated losses include an allowance for uninsured and unreported losses.

"Machining a new alloy without proper safeguards can cause a disastrous fire.

"Nitrate film improperly stored can cause a serious fire if ignited.

"The fire and explosion that blasted a 12-block area in Roseburg, Ore., on August 7, 1959, killing 13 people, injuring 125 others, and causing $9 million of property damage, should never have happened," Mr. Fowler said.

"The Roseburg fire and explosion emphasized the need for broader regulations covering the transportation and storage of hazardous materials. The adoption of more complete safety codes with strict enforcement by state and local authorities is one way to minimize the possibility of another Roseburg.

"No community can afford to be without a Fire Prevention Code and every Fire Prevention Code should be enforced," Mr. Fowler declared.

The newly revised Fire Prevention Code contains more tightly knit regulations covering the transportation and storage of blasting agents, flammable liquids, hazardous chemicals and compressed gases. It also contains revisions of regulations pertaining to welding and cutting, the use of blow torches and provisions regarding the use of ethylene in fruit ripening processes.

Copies may be obtained by writing to the National Board of Fire Underwriters, 85 John Street, New York 38, N. Y. In the Middle West, write to 222 West Adams Street, Chicago 6, Ill., and if west of the Rockies, to 465 California Street, San Francisco 4, Calif.

Fire Protection Scholarships

An outstanding scholarship program is available for capable and energetic high school graduates in eastern states. Fifteen young men, interested in a career in a growing profession, can win four-year scholarships in the Fire Protection Course at the University of Maryland's College of Engineering.

The scholarships are awarded under a program sponsored by seven eastern fire insurance rating organizations and administered by the Inter-Regional Insurance Conference. The scholarship committee invites local high school guidance counsellors and principals to recommend young men of high academic standing who are likely prospects for the scholarships.

Successful candidates receive full tuition and room and board for the four-year period. Each successful applicant is employed during the summer months by a rating organization and upon graduating from the course with a bachelor of science degree, will then serve the rating organization for a period of at least four years.

The program is open to high school graduates who reside in

Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island and Vermont.

Preliminary applications for the 1961 scholarship awards are being accepted by the Inter-Regional Insurance Conference (125 Maiden Lane, New York 38, N. Y.) until February 15, 1961.

These scholarship grants were established to interest young men in the elements of fire protection and to meet the growing demand for fire insurance inspection and rating service occasioned by the ever changing techniques and processes of modern industry and related business activity. Highly qualified men are needed to serve property owners and municipalities in providing improved construction and fire protection for the many varied hazards of industry and commerce and to help reduce the tremendous annual fire waste in the nation.

This is the third year in which the seven eastern rating organizations have sponsored the scholarship program.

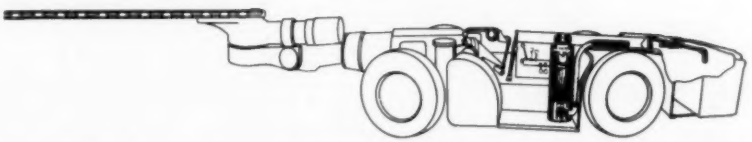
Fire Hazards of Nitroparaffins

Two recent explosions of railroad tank cars filled with nitromethane were of a high order of severity and violence. They called attention to the hazards involved in handling the nitroparaffins group of organic chemicals, warns a recent bulletin of the National Board of Fire Underwriters. Huge craters were formed at the scene of each of these explosions and millions of dollars worth of property damage resulted. Two of the train crew were killed and many other people were injured. Nitromethane had been shipped by rail in drums for many years and, more recently in tank cars, without any trouble prior to these two explosions.

The nitroparaffins comprise a group of organic compounds which have grown in a short time from laboratory chemicals to large-volume commercial commodities. Of the four commercial nitroparaffins, nitromethane presents the most

(Continued on page 32)

FIRE PROTECTION FOR COAL LOADERS



A close-up of the 30-pound dry chemical piped system installed in the cable reel sections of soft coal loading machines to protect against cable fires.

The Semet-Solvay Division of Allied Chemical Corporation has developed a new system of fire protection for its soft coal loading machines in an effort to provide greater fire safety for mine personnel as well as reduce possible fire damage to the machines.

The new system, developed in cooperation with engineers of a fire equipment manufacturer, involves the use of a 30-pound dry chemical piped system built into the 11-RD loading machine and capable of expelling 30 pounds of dry chemical into the unit's cable reel section as soon as fire breaks out. The system is operated manually. In all, Semet-Solvay has about 30 such machines in its two mines at Tralee and Harewood, West Virginia.

The main fire hazard of the loading machine is the cable reel section, which sometimes starts burning when the two-conductor cable develops cracks after rough usage, shorts out, and ignites the cable.

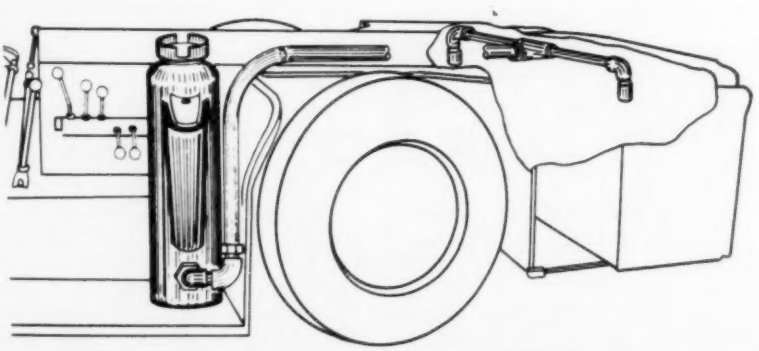
Although such fires occur infrequently (perhaps once or twice a year on the average), damage can run as high as $10,000. What makes the fires even more costly is the fact that down-time for repairs can take anywhere from a day to two months.

Such fires are potentially dangerous to personnel, too, not only because of the possibility of igniting the coal itself but also because acrid smoke from the cables affects ventilation in the mine.

Up to now, Semet-Solvay's main protection against such fires has been the placement of 30-pound dry chemical extinguishers in each section of the mine. Sometimes, however, these extinguishers may be as far as 200 to 300 feet away from a loading machine when a cable fire breaks out, and may become inaccessible because of smoke or flame.

With the new system, the dry chemical extinguishing agent is expelled through flexible hose to the manifold surrounding the back shield of the reel. The manifold is equipped with two nozzles spaced

(Continued on page 45)



A typical soft coal loading machine. Shaded area indicates the dry chemical piped system protecting unit's cable reel section at the rear of machine.

Deluge Protects Airline Passengers

Fig. 1. Curtain of water drenches unusual new loading bridge for American Airlines jet planes. Water curtain guards passengers' safe exit in fire danger.

Passengers De-plane Safely In Emergency Behind Instant Water Curtain Released By Fast-Acting Valve

A curtain of water released by a quick-acting valve will provide a safe exit in an emergency for airline passengers in the striking new American Airlines Terminal Building at New York's famed International Airport. To trigger the protective deluge system American Airlines has used a compact disc-type valve.

An enclosed loading bridge suspended from an overhead trolley about 21 feet above the aircraft parking apron is one of the architectural features of the new terminal building. Airline passengers enter or leave huge jet planes berthed close to the terminal building via a traveling cab that moves up to 13 feet, parallel to the building, from the entrance to the airport's lounge to the airplane's nose. If a fire should break out while the plane is fueling, or at any other time with passengers on board, they will be able to leave the plane quickly and safely as a curtain of water is discharged from spray nozzles above and below the loading bridge. (Figure 1.)

This deluge system, employed on all eight terminal loading bridges, is connected to 4-inch fire standpipes served by a 500 GPM fire pump. The fire pump is driven by a 50 HP motor and operates against a 231-foot head. Suction is from a city water main at approximately 60 pounds pressure. The 2-in. deluge valve is manually opened to release volumes of water instantly to 2-in. lines feeding spray nozzles above and below the loading bridge.

Six upper spray nozzles fan out the water to drench the steel sheet panels along the entire length of the loading bridge. (Figure 2.) Spray nozzles spaced at equal distances in the angle formed with the

Fig. 3. Lever releases deluge by means of quick-acting valve to provide water curtain tunnel for plane passengers.

building wall beneath the cantilevered loading bridge will quickly wash away burning fuel on the concrete apron. These lower spray nozzles are aimed at an angle of about 45 deg. with the wall to protect the area beneath the loading bridge. A 1″ by ¾″ reducer is inserted before the spray nozzles. The piping is reduced in stages from 2″ to 1½″, 1¼″ and then to 1″ to maintain required pressure at the discharge of the spray nozzles.

When an emergency occurs the quick-acting valve is manually opened by pulling a lever through a 70-deg. arc. This slides a leak-tight sealed disc away from the outlet port for instantaneous flow of water to the deluge system. The deluge valve can be opened by direct lever action at a window station on the second floor of the terminal building (Figure 3), or by cable in conduit from the ground floor. Pendulum weights and automatic release devices can also be used with the valve.

After the valve is reset to shut off the deluge system, the water remaining in the system flows through a ¾-in. drain to grade level. The deluge system was designed for the new American Airlines Terminal Building by Jaros Baum and Bolles, consulting engineers. The deluge valve model was chosen for its unfailing and instant response.

Action is reliable and positive and maintenance of the valve is negligible. The quick-acting valve has provided dependable service over a long life in numerous emergency shut-off applications with hazardous liquids and fuel lines.

Pictures by courtesy of Everlasting Valve Co.

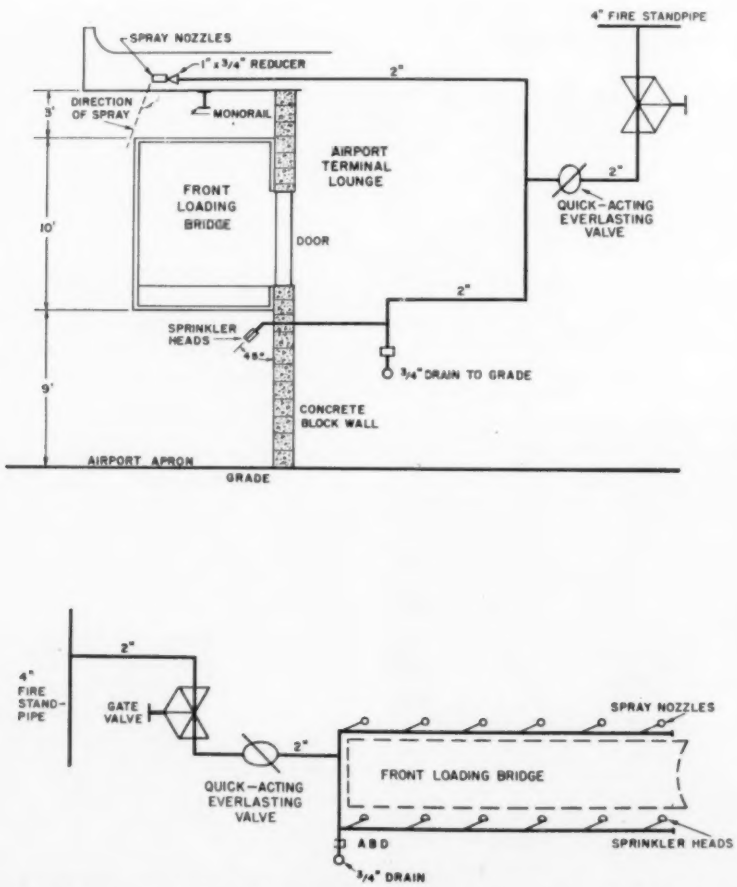


Fig. 2. Diagram of Deluge System guarding passengers and planes indicates the relative positions of the system sections and general mode of its operation.

Nitroparaffins

(from page 30)

serious hazard problem and has been classified as a "potentially explosive chemical" in the Fire Prevention Code recommended by the National Board of Fire Underwriters. The other nitroparaffins—nitroethane, 1—nitropropane, and 2—nitropropane only approach this classification under unusual and extreme conditions. When the nitroparaffins are exposed to certain combinations of temperature, pressure, shock, impact, confinement, contamination, and chemical action, these chemicals may exhibit explosive characteristics.

The nitroparaffins are reactive organic liquids with flash points (o.c.) ranging from 130°F to 120°F. They are saturated hydrocarbons in which the nitro group NO_2 is attached to the carbon as follows $C_nH_{2n+1}NO_2$. The introduction of the nitro group to the hydrocarbon produces some radical changes in these materials. Large rises occur in the flash points and boiling points of the hydrocarbons. What is most noticeable is the change towards instability which occurs upon the addition of the nitro group to the molecules.

The nitroparaffins have been shipped in accordance with ICC regulations either in nonreturnable drums or in tank cars. No special handling or labeling was required on the basis that the nitroparaffins have flash points above the designated ICC limit of 80°F for flammable liquids. As a result of the two recent explosions, nitromethane is now shipped only in drums which contain an inert gas in the void space for blanketing.

Heat Sensitivity

All nitroparaffins decompose when heated. The rate and degree to which heat is applied is an important factor in determining the type of decomposition that prevails. Rapid heating to high temperatures can cause an explosion with some of these materials. When nitromethane is heated under some confinement it reacts this way. Users are cautioned against heating any of the nitroparaffins to temperatures approaching the critical point of 600°F.

(Continued on page 34)

Incinerator Fire Jet System

View from top of parapet looking down on start of test fire. System active in 20 sec.; blaze is extinguished 65 sec. later.

Many municipal and industrial incinerator systems use a storage pit to accumulate the rubbish as it is collected, awaiting transfer into the furnaces. In most cases the transfer is made by means of clam shell buckets and cranes from the pits to the furnace hoppers, at a rate required to properly supply the burning capacity of the furnace. This system permits the ready accumulation of the rubbish and insures a steady supply for incineration, as needed, but also creates the hazard of accidental fires in the stored material.

If these fires occur during the regular burning period, the usual correction is simply to pick up the burning material and transfer it to the hopper and drop it into the furnace for incineration. If, however, the fire occurs when the plant is shut down (holidays, weekends, etc.) a difficult problem arises.

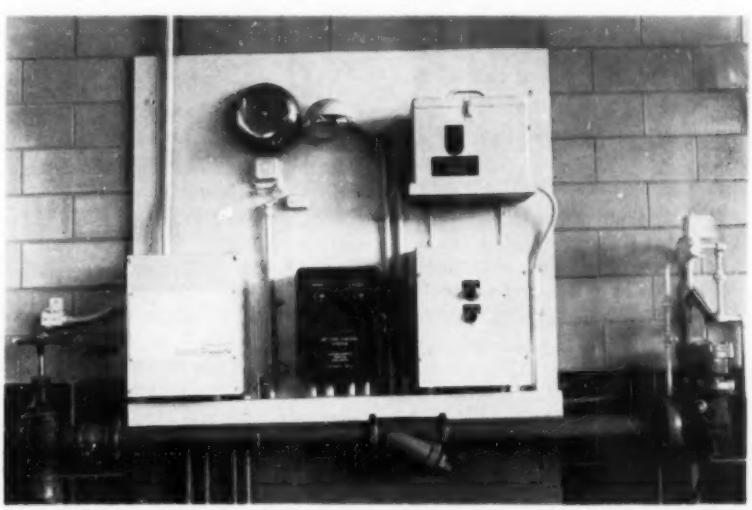
Sprinkler Problems

Ordinary sprinkler protection applies comparatively large quantities of water (500 to 1000 gal. per minute) and virtually fills the pit with water like a giant bath tub. Eventually the sprinkler controls the fire by overwhelming it with water. However during this procedure, the radiant heat does considerable damage to the building structure, crane rails, electrical equipment, etc., and leaves the sodden mess of literally tons of rubbish to be disposed of. The pits are rarely equipped with drains or pumps sufficiently large to handle quantities of water, having been designed to handle small accumulations of run-off from rain-wet rubbish, etc., and the rubbish is so saturated as to be unsuitable for burning.

To meet this problem, a special fire jet system has been designed. Primarily it consists of a row of jet heads, designed for the particular installation, mounted on a suitable pipe-line along the upper wall of the pit building. The jets are designed and arranged to cover the entire rubbish area with a finely divided water fog pattern, to which has been added a wetting agent, compounded to penetrate the rubbish surface rapidly, absorb radiated heat and extinguish or control the fire quickly.

Actuating the System

The system is actuated by a series of detectors strategically placed at the pit level to detect the infra-red radiations of fire, actuate the system until the fire is controlled, shut off and switch to stand-by operation to re-operate if the fire rekindles. By means of interlocking relays, etc., the system is set on automatic protection only when the plant is not in operation, so as not to interfere with the usual operations of loading the pits or



This photo provides an excellent view of the main control station of Fire Jet System which is used to guard the Abington Incinerator at Abington, Pa.

transferring the material for the furnaces.

A set of relays also actuate a local alarm both by sight and sound as well as sending a remote signal to fire or police headquarters. A self-checking feature is included to cause the system to supervise its own operation when it is on automatic protection, so that any interruption (either accidental or purposeful) sounds a trouble signal.

In operation the system will discharge approximately 100 gal. of solution in about 90 seconds, shut down on stand-by and signal the alarm. From experience over a period of four years on six incinerators that have been checked, the systems have proven highly effective, having operated on some 30 fires and effectively controlled them all.

Because of the simplicity and effectiveness of the system, which has no moving parts, it lends itself to a comparatively simple installation and is entirely self-contained. All features are designed and built to simplify the problems of maintenance.

Requested Resurvey

In several installations the municipalities using the system have requested a resurvey and rerating from their fire insurance carriers and in every case have been granted considerable reduction in fire insurance costs. In all cases enough savings have resulted to amortize the cost of the system in from two to four years.

Since each jet system is engineered to fit the particular job, the designers survey the location of existing installations and prepare the plans to suit, or provide the designing engineers with the required details to include the system on the drawings for new installations. The development of this system has provided a long needed protection for an inherently expensive hazard that has plagued incinerator operation for nearly a half a century.

A source for further information about the incinerator storage fire protection system can be obtained upon inquiry to the Editors.

Pictures by courtesy of Central Safety Equipment Co.

Nitroparaffins

(from page 32)

The nitroparaffins all have relatively high flash points but they are combustible and will burn after they are ignited. Under conditions of fire, nitromethane may become dangerous since the heat produced noticeably increases the susceptibility of nitromethane to shock. The sensitivities of the other nitroparaffins are increased with a rise in temperature, but to a somewhat lesser extent than the nitromethane.

Shock Sensitivity

Shock can affect the nitroparaffins. Of the four commercial nitroparaffins now marketed, nitromethane is sensitive to severe shock and heat. Nitroethane is next in sensitivity with 1—nitropropane and 2—nitropropane sensitive to a lesser degree. The nitropropanes show a tendency towards a low order detonation under very severe test conditions.

Some of the tests indicate that the nitromethane may explode when subjected to certain conditions of (adiabatic) compression. Pressures of 2000 psi under confined conditions were found to detonate nitromethane. In ordinary processing the nitromethane should be pumped at atmospheric temperatures with 100 psi pressure limit. Forcing nitromethane under high pressure into closed end pipes or constricted fittings should be avoided. A detonation is possible under such hydrodynamic effects. Detonation traps are used to prevent propagation of an explosion in a pipe line.

A number of materials sensitize the nitroparaffins to shock. For instance, aniline, ethylene diamine, morpholine, and other similar alkaline materials will sensitize nitromethane so that it can be detonated with a No. 8 blasting cap. In general, the sensitizers are either alkaline or highly oxygenated materials.

Precautionary Recommendations

Recommendations for the storage and handling of the nitroparaffins are given in NBFU Research Report No. 12, "Nitroparaffins And Their Hazards."

In general all the nitroparaffins should be kept away from sensitizing contaminants, heat, fire, shock, pressure (adiabatic compression), and hazardous process areas which present explosion potentials. Materials handled inside plants should be kept to a minimum, consistent with working inventories, and the area should be protected by automatic sprinklers.

Isolated storage is recommended for nitroparaffins. A suggested table of distances for nitromethane in particular appears in the report. Other recommended safeguards involve general protective storage conditions. In addition, the report recommends qualified supervision in processing operations, suitable temperature controls, and barricade requirements, together with adequate maintenance and proper fire protection.

Fire Insurance Rate Reductions

Strict and consistent safety efforts and the use of a $100 deductible on certain losses can reduce annual fire insurance premiums by substantial amounts for many schools, cities, counties, other public properties and private institutions under a new plan announced by the Pacific Fire Rating Bureau. The new Plan may be applied to policies effective January 1, 1961 and thereafter.

At the present time many of the risks eligible for the new Plan are already receiving reductions because of the size of premium paid and dispersal of risk. To take a hypothetical case, the Bureau explained, a buyer whose basic annual premium is $5,000 might already be receiving a maximum reduction of 16%. Such an eligible buyer will have the choice of retaining his present arrangement or using the new Plan with premium savings ranging from 25% to 37%.

Known as the Public and Institutional Property Plan, this new concept also provides some broader coverages that were not usually available heretofore.

To qualify, a political subdivision or private institution must pay an annual premium of at least $1,000

(Continued on page 54)

Learning The Hard Way

WELDERS' PROBLEM

An electric arc welder was removing the slag from a bead with a chipping hammer. To get a clear view of the work, he had tilted his helmet back. A flying chip of the slag struck one of his eyes, causing permanent impairment of its vision. For chipping operations, welders must be provided with safety-lens goggles or glasses to wear under the welding helmet. If welders, because of perspiration caused by the welding heat, find the wearing of safety goggles impractical, then their helmets should be of the double-lens type. The outer colored lens can be lifted up, but a shatterproof clear lens remains in place to protect his eyes during the chipping operation.

DOUBLE EXPOSURE

A mechanic was trying to adjust a conveyor mechanism which was still in operation. He was leaning over a cooling trough just below the conveyor, and when he straightened up, his head accidentally came between the rollers of the chain-drive conveyor. The mechanic's neck was broken and his face badly mutilated. In investigating the accident, management found two grounds for an evidently needed review of its safety procedures. First, additional training and enforcement of rules requiring the shutting down and locking out of machinery during repair and adjustment would be necessary. Second, it was discovered that the dead mechanic had been blind in one eye, a fact which indicated the need for more consideration of safety requirements in the selection and placement of employees for specific jobs. Obviously a man with hampered vision should not be placed in a job where depth perception might be a vital safety factor.

WHATEVER GOES UP...

On the top shelf of a seven-foot high storage rack was a 15-pound product which a stock room employee had been directed to get. Since the storage area was not supplied with ladders or movable stands, the employee had to climb up the shelves. Standing on the top of the rack, he passed the package down to another employee. As he started to step down to the next shelf, he grasped the corner of the top sign in a pile of signs also stacked on the top shelf. The sign was light in weight and, instead of steadying him, slipped to one side. The employee lost his balance, fell and landed flat-footed on the concrete floor. The force of the fall fractured both heel bones. Accidents and injuries of this kind must be expected if employees are not provided with the means of working safely.

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(Use Key # B-12 on Inquiry Card on page 1)

The Pomona, California, plant of American Brake Shoe Co. has won the company's top safety award—the President's Safety Trophy—for its exceptional safety record in 1960. Kempton Dunn, President of Brake Shoe, presented the trophy to Charles W. Taber, plant superintendent, in a special ceremony attended by plant employees and officials.

The Pomona plant led Brake Shoe's 51 U. S. and Canadian plants with the lowest accident-frequency rating for the 1960 safety year. In the 12 months preceding July 31, 1960, Pomona employees worked 110,819 man-hours without a reportable injury. Since January 1, 1956, they've worked a total of 493,968 man-hours with only one disabling injury.

Mr. Taber gave full credit for the plant's excellent record to his employees and pointed out that it could not have been achieved without the wholehearted support of everyone in the Pomona plant.

• • •

A record of 2.5 million consecutive man-hours without a disabling injury over an 18-month period at its Battle Creek (Mich.) plant has earned the Marsh and McLennan Safety Award for Oliver Corporation, Chicago-headquartered farm and construction equipment manufacturing firm. The award was made to Samuel W. White, Jr., Oliver Corp. president; Harry T. Rambo, Battle Creek plant manager, and Ed Hessmer, safety director of the Battle Creek plant. Making the presentation in behalf of Marsh and McLennan, Inc., insurance brokers who work actively with industries in promoting accident prevention and safety, were Vice President John Clements and Fred J. Boles, manager of safety engineering, both of Chicago.

Only 19 such Safety Awards have been made in 11 years and this is the second time the Battle Creek plant has earned the award and the third time for an Oliver plant. The first Safety Award made by Marsh and McLennan, in fact, was presented to Oliver for a Battle Creek plant safety record of 2 million consecutive man-hours without a disabling injury in 1950. The Oliver South Bend plant subsequently earned the Safety Award in 1958.

• • •

The First U. S. Army (comprising New York, New Jersey and the New England States) won the Department of the Army "Award of Merit for Safety" for the reduction in all types of accident and injuries during Fiscal Year 1960. General Herbert B. Powell, Continental Army Commander, presented the award to Bernard L. Taylor, Assistant Chief of First Army G-1's Safety Division, and Colonel James B. Wells, First Army G-1.

Lieutenant General Edward J. O'Neill, Commanding the First U. S. Army, when informed of the selection, said, "This is the second consecutive year this command has been selected for this award and it is a commendable achievement.

"Particularly noteworthy," he stressed, "was the 22 percent reduction in per capita cost of accidents and injuries with a theoretical savings of over one million dollars.

Such results are indicative of the effective and timely emphasis which commanders have placed on safety consciousness and education."

• • •

Pennsylvania Railroad employees achieved substantial and accelerating gains in safety on the job last year, sharply improving on the advance registered in 1959, John T. Williams, manager of safety, announced recently. Figures for the first 10 months of 1960 show that the injury rate, based on man-hours worked, was cut by more than 13 percent compared with the same period of 1959. This comes on top of a 4.4 percent improvement for all of 1959, compared with 1958.

The upward trend in employee safety is general across the railroad, he noted, with improvement of from 8 to 22 percent shown in six of the Pennsy's nine operating regions and the two system-wide departments.

• • •

On behalf of 550,000 Post Office employees, former Postmaster General Arthur E. Summerfield accepted an award recently from the Auto Industry Highway Safety Committee for the Post Office Department's participation and leadership in the "1960 National Vehicle Safety Check Program."

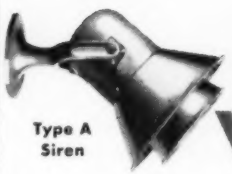
This is the fourth consecutive year that the Post Office Department has been honored with this Certificate of Achievement Award. Awards also were presented in their area to the following ten Postal Regions for their noteworthy performance in the National Vehicle Safety Check Program; Boston, Chicago, Cincinnati, Denver, Memphis, Minneapolis, New York, Philadelphia, Seattle, and San Francisco.

This year for the first time the Post Office Department made a special effort to encourage postal employees and their families to have their privately-owned motor vehicles checked.

More than 3.2 million public and private vehicles were safety-checked during the 1960 campaign and 16.3 percent of the vehicles checked needed service attention. Postal vehicles of all types lined up for passage through vehicle inspection lanes and where community programs were not operative, in many instances, the local post office set up their own inspection lanes. Local post office leadership and publicity was contributed in many areas.

The approximately 85,000 motor vehicles operated by more than 115,000 postal drivers in every corner of the country contribute materially to the National Safety effort through their example. Since the Post Office Department started a serious attack on motor vehicle accidents in 1953, the rate of accidents has been reduced from 13 to approximately two per 100,000 miles traveled.

• • •



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Drop In Number of Unsafe Vehicles

Results of the 1960 National Vehicle Safety-Check program show an all-time low percentage of vehicles in unsafe operating condition. For the first time in the 13-year history of the annual campaign, **one out of every six cars and trucks** going through local check lanes and dealer service departments was found to need immediate service attention to at least one of the ten items affecting safe driving condition. For the last five years, one out of five vehicles had been found with at least one unsafe item.

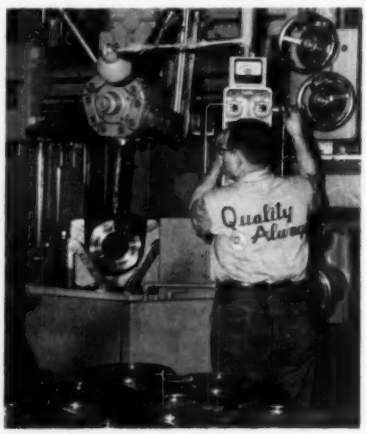
"This improvement demonstrates a growing public awareness of the importance of maintaining vehicles in safe driving condition," declared M. R. Darlington, Jr., Director of the National Vehicle Safety-Check program.

A new record high total of more than 3.2 million vehicles were Safety-Checked during the 1960 campaign urging motorists to "Join the Circle of Safety—Check Your Car . . . Check Your Driving . . . Check Accidents." Another high of 2,955 programs were conducted in 1960 in cities and counties, at military installations, by teen-age groups, and by industrial plants and government agencies for employees and their own vehicles.

The Vehicle Safety-Check is sponsored by the Auto Industries Highway Safety Committee and "Look" magazine, with the cooperation of the Association of State and Provincial Safety Coordinators.

Rear lights headed the list of items most often found in need of attention. These were followed in order of frequency by front lights, brakes, exhaust systems, and tires. The percentage incidence of faulty rear lights was also the highest ever —31.2%. For the first time since 1951, the percentage of windshield wipers needing maintenance attention exceeded that of steering mechanisms. For the second straight year, brakes were in third place—however the percentage of defective brakes uncovered was the lowest on record at 13.6%. Other items included in the 10-point Safety-Check were glass, horn, and rear view mirrors.

The voluntary Safety-Check program is conducted annually during May and June in states not requiring official motor vehicle inspection. Two states which participated in the 1960 campaign will be missing from those taking part in 1961. Mississippi and Louisiana have recently adopted legislation requiring official inspection of motor vehicles.



"Quality Always" Replaces Wide Variety of Shirts

Industrial plant workers have a long tradition of haberdashery in which a wide variety of bowling league shirts, GI sun tans, sweat shirts, wild sports shirts, and shirts defying description are the uniform of the day.

With the introduction of these company-sponsored "Quality Always" shirts at Edward Valves, Inc., Subsidiary of Rockwell Manufacturing Company, morale and quality itself has boomed, according to David C. MacGregor, Edward Valves' manufacturing manager. In addition, safety has been stepped up by the elimination of dangling shirt tails and long sleeves. The shirts add to the impact of signs and posters plugging the "Quality Always" theme throughout Edward plants. With tongue-in-cheek, MacGregor adds "our 'Quality Always' message literally as well as figuratively gets closer to our people when they actually wear it."

Safety Conference In Pennsylvania

The Annual Pennsylvania Occupational Safety Conference is a good example of cooperation among labor, management and government.

Sponsored by the Pennsylvania Department of Labor and Industry, the conference encourages cooperation among the three groups in the field of on-the-job safety in Pennsylvania industries. Safety personnel from labor organizations and industrial management throughout the state attended the conference this year, November 15 and 16.

Nine panels were in session at the two-day conference held in Harrisburg. One was a Safety In Lifting School conducted by engineers of the Wire Rope Division, Jones & Laughlin Steel Corporation, Muncy, Pa. The other panels discussed safety devices and protective equipment, new hazards and unusual accidents, safety practices and problems in radiation, construction, utilities, portable power tools and power actuated tools, foundries and machine shops and transportation.

The school was a demonstration of material handling by J&L safety engineers using specially constructed and operated models. The instructors show the proper use of slings in lifting operations and the prescribed maintenance procedures to extend sling life. They also check on safety principles allied with heavy lifting operations.

Main feature of the school is a working model of a double-hook crane. On this model, the J&L men can duplicate all lifting operations of a standard crane. Other visual aids—including models of equipment posing special lifting problems, color slides of typical lifting situations and displays of equipment such as eyebolts, cable guards and wire rope slings—also are employed in the instruction.

Lieutenant Governor John Morgan Davis gave the welcoming address to the conference delegates. Howard Pyle, president, National Safety Council, and Paul R. Hutchings, director of research, Metal Trades Dept., AFL-CIO, were the luncheon speakers.

industrial hygiene

IRFAA Elects

M. Loyd Fuller, Dallas, Texas, assumed the duties of President of the International Rescue and First Aid Association on January 1, succeeding Conrad H. Kreyling, River Edge, N. J., who completed his second term in the presidency.

Other officers elected at the IRFAA's 13th Annual Convention include Frederick Evans, Arnprior, Ontario, Canada, First Vice President; Theodore W. Hart, Plainfield, N. J., Second Vice President; Paul O. Metcalfe, Greeneville, Tenn., Recording Secretary; and J. B. Taliaferro, Jr., Tappahannock, Va., Treasurer.

All of the elected officers, including the Regional Vice Presidents, serve as volunteers for one-year terms as do the more than 100 other appointed officers who serve on state and provincial levels in the U. S., Canada and other countries.

Contest Winners

The IRFAA's annual International First Aid Contest was won by the Metropolitan Toronto, Canada, Branch of St. John Ambulance with the Mt. Orford Ski Patrol team of Magog, Quebec, Canada taking second place. The Bowling Green, Va., Rescue Squad's mens team won third place with the Lambertville, N. J., Rescue Squad fourth; and Rescue Company No. 3, Massapequa, N. Y., fifth.

Dominion Bridge Emergency Squad, Montreal, Canada, won the IRFAA's first annual Rescue Contest with the Hennepin County Sheriff's Rescue Squad, Minneapolis, Minn., taking second place. The Riviera Beach, Md., Fire Department team was third; Toronto, Canada No. 1 Rescue Squad was fourth; and fifth place was won by the Oceanside, N. Y. Fire Department.

The convention program included workshops on specialized first aid, rescue, fire, safety, poison emergencies, resuscitation, operations and public relations, with widely-known experts in the various fields serving as moderators and panelists.

The IRFAA will hold its 14th Annual Convention at the Hotel Roanoke, Roanoke, Va., November 2, 3 and 4, 1961.

Ventilation and Safety

Workers in air-conditioned factories may not realize it, but they are safer as well as more comfortable than their freezing or sweltering neighbors. But their employers may sometimes suffer sleepless nights keeping the help happy.

In a paper delivered at an engineering meeting in New York City, E. M. Schmidt, chief mechanical engineer, engineering and construction department, Ford Motor Company, Dearborn, Michigan, said that manufacturers must get rid of the air contamination usually found in industrial plants quickly, efficiently and safely to protect both workers and machines. Industrial ventilation "actually prevents physiologic damage from abnormal atmospheres," he noted. The paper was delivered before the Winter Annual Meeting of The American Society of Mechanical Engineers.

One slip can lead to trouble, Mr. Schmidt indicated. He cited the example of a puff of unburned fuel that escaped from one plant heater. The resulting flame seriously burned an employee working on the unit. An induced draft fan near such a unit "insures positive purging and elimination of the products of combustion," said Mr. Schmidt.

There are many different kinds of ventilating systems, ranging all the way from an open window to expensive and delicate machines. The industrialist must be careful, Mr. Schmidt said, that air which comes from some other part of the building, drawn along by the ventilating system, does not drag contaminants past personnel and other processes on the way.

"The design of industrial ventilation must be approached with an open practical mind," Mr. Schmidt told his audience. "The heated contaminated air rises to the underside of the roof; therefore that is the place to install the exhaust facilities. The comparatively cooler and cleaner outside air for make-up is most effective when introduced at a low level with sufficient control to benefit employees. Tight, intelligent specifications, products by reputable manufacturers and good field inspection during installation are prime requisites for a safe installation of industrial ventilation."

AEC Radiography Safety

The Atomic Energy Commission has issued a new regulation and an amendment to an existing regulation to establish specific safety and licensing requirements for persons using sealed sources of byproduct material (radioisotopes) in radiography.

The new regulation, entitled "Radiation Safety Requirements for Radiographic Operations," will become Part 31 of Title 10, of the Code of Federal Regulations. The new amendment will become part of Part 30, Title 10, of the Code of Federal Regulations, entitled "Licensing of Byproduct Materials."

The regulation and the amendment have been revised in the light of these comments and in the light of further staff study. The regulation becomes effective 90 days, and the amendment 30 days, after publication in the Federal Register on November 29, 1960.

Licenses to use byproduct materials in radiography currently are issued under the general provisions of AEC regulations and applicants are required to submit complete and detailed descriptions of their operations for inclusion in their licenses.

The new regulation sets forth the conditions under which personnel and equipment may be used in radiographic work involving the use of byproduct material and minimizes the need for placing special requirements in each radiography license.

Since the use of radioactive isotopes for photographing welds, castings and similar materials for flaws has increased substantially in the past year because of the low cost of the isotopes and their increasing availability, it is expected that the regulation and amendment will facilitate the Commission's licensing program in this field. The regulation sets up rules for equipment control, including levels of radiation for radiographic exposure devices and storage containers, the locking of radiographic exposure devices, storage precautions, use of radiation survey instruments, leak testing of sealed sources, inventory and utilization logs; personnel monitoring; and precautionary procedures in radiographic operations.

The amendment to Part 30 establishes the requirements and procedures by which an applicant may obtain a specific license for radiographic work in which he proposes to use sealed sources.

Radiation Safety and the Chemical Engineer

Chemical engineers have an eight-step responsibility in designing equipment to protect workers and and the public against radiation in the atomic energy field, W. B. Harris, of the U. S. Atomic Energy Commission's Health and Safety Laboratory, New York, stated recently.

Their responsibility, he told the 53rd Annual Meeting of the American Institute of Chemical Engineers, lies in designing adequate dust suppression and control equipment, air cleaning equipment for liquid and solid aerosols and gaseous effluents, designing shielding against high radiation fluxes, design of equipment for small batch sizes that will permit economic operation, reduction of potential fire hazards to lessen the possibility of contamination of the neighborhood, design of reactor contamination equipment so that in the event of accidental release of materials from the reactor the landscape will not be seriously contaminated, and design of shipping containers which will permit nuclear materials to be transported from the place of manufacture to the place to use.

He pointed out that extreme care must be taken in designing shipping and transport containers for unused and irradiated fuel. "The major problem with the unused fuel elements is that unless geometric considerations are used and spacing between masses of material is maintained, shipping must be kept to very small lots to avoid the possibility of criticality. For this service a device which is known as a birdcage is most frequently used . . .

"After irradiation a more serious and difficult problem exists," in addition to criticality "there is also present in the fuel elements a very large quantity of highly radioactive fission product materials, which generates an enormous amount of heat" often in the neighborhood of several hundred degrees. The elements must be shielded to prevent direct radiation from injuring people or industrial products and the heat generated within the core must be dissipated to the atmosphere. "Shipping containers must be designed not only to prevent these occurrences but to continue to provide safety in the event of a serious train wreck or motor vehicle accident."

Equipment Decontamination

What do you do with a $50,000 piece of equipment with plenty of productive life left in it that needs repair—but because of radioactivity is literally too "hot" to handle? For several years at the Hanford atomic plant the answer often was a simple but costly one; scrap it and buy new equipment.

Today, because of a large-scale decontamination project backed by the Atomic Energy Commission and carried out by General Electric, scores of pieces of nuclear hardware worth hundreds of thousands of dollars have been scoured of their radioactive "grime," repaired and returned to the atomic production line.

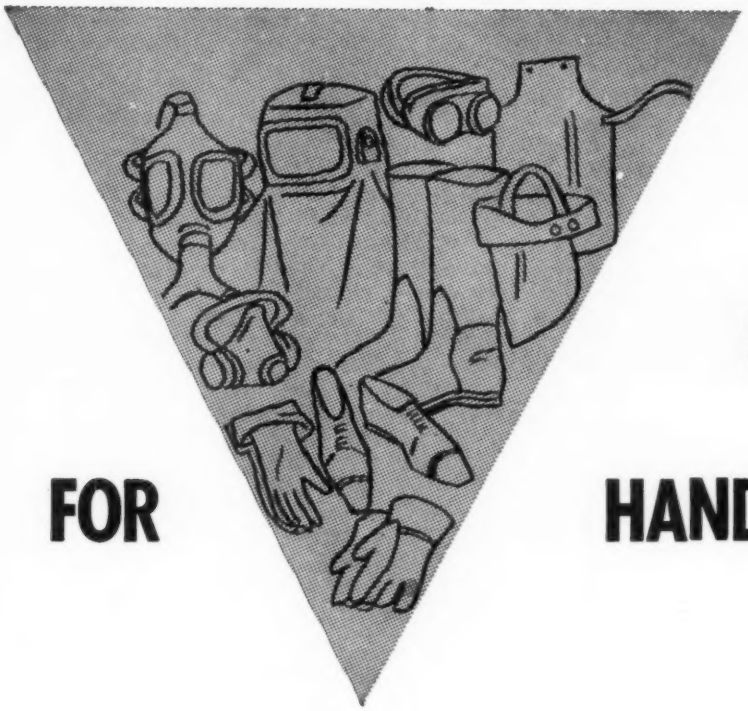
General Electric is prime contractor at the AEC's vast, 600-square-mile plutonium plant in Washington state's southeastern desert.

Before decontamination got underway, many large, high-cost pieces that had picked up radiation during the chemical processing of plutonium, much of it tailor-made for unique nuclear needs, had to be plowed under in deep burial pits at Hanford because workmen couldn't get near enough to make repairs.

That was the case until 1957, when a giant concrete "canyon" building, one of the older chemical separations plants used for extracting plutonium for other fission products, was converted to a full-scale decontamination facility.

No suitable building was available before then to house the necessary radiation-scrubbing tools and

(Continued on page 44)



SAFETY EQUIPMENT FOR HANDLING — *Chlorine*

While personal protective equipment is not an adequate substitute for good, safe working conditions, adequate ventilation, and intelligent conduct on the part of employees working with chlorine, it is, in many instances, the only practical means of protecting the worker, particularly in emergency situations. One should keep firmly in mind that personal protective equipment protects only the worker wearing it, and other unprotected workers in the area may be exposed to danger.

The correct usage of personal protective equipment requires the education of the worker in proper employment of the equipment available to him. Under conditions which are sufficiently hazardous to require personal protective equipment, its use should be supervised and the type of protective equipment selected should be capable of control over any potential hazard.

The accompanying article is from "Chemical Safety Data Sheet for Chlorine" published by the Manufacturing Chemists' Association, Inc. The complete data sheet, in addition to this information on personal protective equipment, also covers chlorine properties, hazards, engineering control, safety, emergency measures, handling and storage, equipment cleaning and repair, waste disposal, medical management and first aid. Copies of the complete data sheet (SD-80) are available for 30¢ from: Manufacturing Chemists' Association, Inc., 1825 Connecticut Ave., N. W., Washington 9, D. C.

The following personal protective equipment should be used when indicated.

Eye Protection

Chemical Safety Goggles: Cup-type or rubber framed goggles, equipped with the approved impact resistant glass or plastic lenses, should be worn whenever there is danger of chlorine coming in contact with the eyes. Goggles should be carefully fitted.

Spectacle-Type Safety Goggles: Metal or plastic rim safety spectacles with unperforated side shields which can be obtained with prescription safety lenses or suitable all plastic safety goggles may be used where continuous eye protection is desirable, as in laboratories. These types, however, should not be used where complete eye protection against chlorine is needed.

Face Shields: Plastic shields (full length, eight inch minimum) with forehead protection may be worn in addition to chemical safety goggles where complete face protection is desirable. Chemical safety goggles should always be worn as added protection where there is danger of material striking the eyes from underneath or around the sides of the face shield.

Respiratory Protection

Severe exposure to chlorine may occur in tanks during equipment cleaning and repairs, when decontaminating areas following spills, or in case of failure of piping or equipment. Employees who may be subject to such exposures should be provided with proper respiratory protection and trained in its use and care. Available types are described below.

Note: Respiratory protective equipment must be

carefully maintained, inspected, cleaned and sterilized at regular intervals, and always before and after use by another person.

(a) Self-contained Breathing Apparatus which permits the wearer to carry a supply of oxygen or air compressed in the cylinder, and the self-generating type which produces oxygen chemically, allows considerable mobility. The length of time a self-contained breathing apparatus provides protection varies according to the amount of air, oxygen or regenerating material carried. Compressed oxygen should not be used where there is danger of contact with flammable liquids or vapors, especially in confined spaces such as tanks or pits. A special type of self-contained breathing apparatus may be used which is provided with a small cylinder of compressed air for escape but is supplied with air through an air line for normal work purposes.

(b) Positive Pressure Hose Masks which are supplied by blowers requiring no internal lubrication. The wearer must be able to use the same route for exit as for entrance and must take precautions to keep the hose line free of entanglement. The air blower must be placed in an area free of contaminants.

(c) Air-Line Masks supplied with clean compressed air are suitable for use only where conditions will permit safe escape in case of failure of the compressed air supply. These masks are usually supplied with air piped to the area from a compressor. It is extremely important that the air supply is taken from a safe source, and that it is not contaminated by oil decomposition from inadequate cooling at the compressor. The safer method is to use a separate compressor of the type not requiring internal lubrication. Pressure reducing and relief valves, as well as suitable traps and filters, must be installed at all mask stations. An alternate arrangement frequently used is high pressure breathing air from standard (200 cu. ft.) cylinders, with a demand-type valve and face piece. This arrangement may also be used with 50–100 lb. clean piped plant air.

(d) Chemical Cartridge Respirators may be used to avoid inhaling disagreeable but relatively harmless concentrations of chlorine vapor. These respirators, however, are not recommended for protection where toxic quantities may be encountered.

Caution! Filter-type respirators do not offer protection against gases and are unsuitable for use when working with chlorine.

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SAFETY CHECK LIST *(from page 16)*

DO	WHY
13. Always lift batteries with mechanical equipment such as hoist, crane or lift truck. Move batteries horizontally with power trucks, conveyors or rollers. Make sure that hoist hooks, spreader bars and other tools are of ample strength and properly installed. Cover top of battery with rubber mat or other insulation to prevent external short circuits from chains or cables falling on top of the battery.	*Batteries are a heavily concentrated load and might easily cause painful strains or injury to handlers' feet or hands. Batteries, too, may be seriously damaged or electrolyte spilled if the battery is dropped.*
14. Make sure that charging plugs and receptacles are properly locked and all other connections tight.	*A loose connection may mean sparking or even arcing with danger of a gas explosion.*
15. Restrict the battery room to authorized personnel only . . . persons who are qualified by training and experience in handling batteries.	*Untrained or inexperienced persons may unknowingly break normal rules for proper handling . . . causing injury to themselves and damage to batteries and equipment.*
16. Familiarize yourself as completely as possible with batteries and the proper rules for their charging, handling and maintenance.	*Full knowledge of batteries and proper handling will pay dividends in the elimination of injuries and damage.*
17. Check batteries for cracked jars and covers. Repair at once.	*Loss of electrolyte will lower battery capacity and cause possible damage to cell.*
18. When batteries are scrapped at the end of useful life, drain electrolyte and flush out with water.	*Scrap dealers are not familiar with batteries. Even an old battery may have enough residual voltage to cause a spark if electrolyte has not been dumped out.*

Pictures by courtesy of Gould-National Batteries, Inc.

Ambulance boat provides fast, smooth trip to shore for sick or injured mariners in Detroit lake area.

FIRST AID AFLOAT

Ambulance Cruiser Provides Fast Trip to Shore From Ship in Lakes Emergencies

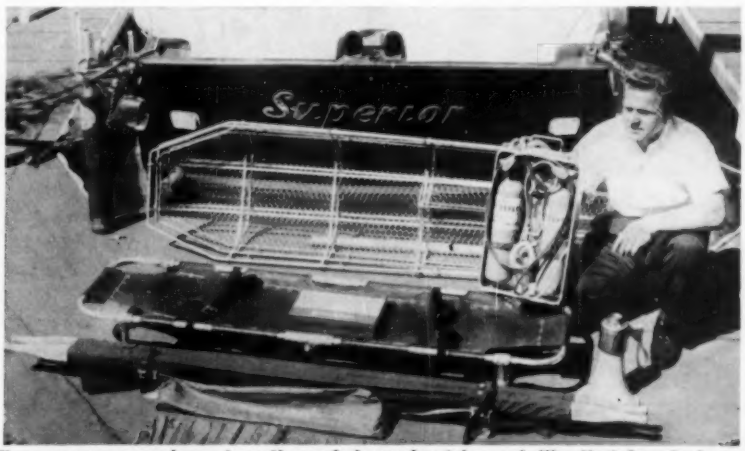
A new kind of medical service is making sea duty safer for mariners on the Great Lakes within speedboat distance of Detroit.

It's a 31-foot express cruiser, completely outfitted as a water-going ambulance, equipped with a portable resuscitator, stretchers, splints, skin diving gear, and complete first aid facilities to freighters and pleasure craft in the nearby waterways at speeds of up to 40 miles an hour.

"This is the first service of its kind on the Great Lakes," said Walter Gutowski, owner of Superior Ambulance Company, Wyandotte, Mich., which operates the cruiser as well as a fleet of auto ambulances on land.

In its first year of operation, the boat already has answered several distress calls and is in demand during

Back-pack resuscitator permits attendant to have hands free for climbing.



The emergency equipment on the ambulance boat is much like that found aboard ambulances on land: stretchers, splints, resuscitators, first aid equipment.

boat races and other water sporting events near Detroit.

Gutowski saw the need for a water ambulance when he learned that tugs and barges often were used to transport heart attack or appendicitis victims from their ships to hospitals ashore. "We had to stand by on land, waiting," he said. "We realized more speed and comfort were needed; these are as important on the water as they are on land."

"In many cases, it's vital to get oxygen equipment to the victim as quickly as possible," Gutowski said. "Our back-pack type of resuscitator can be strapped to the attendant's back and carried from the ambulance up a rope ladder or over a ship's side and directly to the victim without loss of time," he pointed out.

As on land, time is important, Gutowski said. In an emergency, the marine ambulance can be away from its mooring at the rear of Wyandotte General Hospital in minutes, and keep contact with its "target" ship by a two-way marine radio. Ships can summon the ambulance boat by telephoning the ambulance company office ashore.

Pictures by courtesy of National Cylinder Gas Division, Chemetron Corp.

Equipment Decontamination
(from page 40)

machinery and permit Hanford personnel to continue development of existing decontamination techniques.

Decontamination teams in General Electric's Chemical Processing Department now employ a gamut of means to dislodge stubborn radioactive particles ranging from ultrasonic sound waves to more familiar mop-and-pail methods.

Some 91 pieces of equipment valued at $538,000 have been cleaned up and repaired at a cost of about $120,000. The savings in taxpayers' dollars, which support the AEC's nuclear plant, so far stands at nearly $418,000. And with a big back-log of equipment waiting to be decontaminated, continued savings can be counted upon.

Aids Defect Inspection

Another expense-cutting result is that engineers now can make visual inspection of failed equipment, pin down the faulty part or mechanism and recommend design changes in new equipment that correct the cause of failure.

One of the most expensive items decontaminated to date was a $49,000 concentrator used in the chemical separations process. Packaged in a radiation-reducing "box" at the plant site, the five-ton concentrator was hoisted on a railroad flatcar by remote-controlled handling equipment and towed to the canyon building. Empty "spacer" cars separated the switch engine from its radioactive cargo.

A huge, 75-ton crane swinging high overhead in the canyon building was used to guide the concentrator through a typical decontamination cycle. The crane operator, enclosed in a lead-lined cab and able to see only through a specially designed optical device, first dunked the concentrator in a deep vat filled with a powerful caustic alkaline permanganate solution. This is the "oxidation" stage of the basic oxidation-reduction method used successfully at Hanford.

Next, the concentrator was flushed with water and doused in a nitric and acid solution "bath," or the "reduction" step. Finally, with radiation reduced to a safe level, workmen were able to remove the remaining "hot spots" by hand with wire brushes, steam cleaning and mopping.

Radiation Reduced 600 Times

Decontamination specialists point out that after only three days of work, the radiation level of the concentrator was lowered some 600 times, to a point where workmen could safely make repairs.

Using similar methods, atomic workers have cleaned up and repaired large dissolvers, condensors, agitators, electric pumps, centrifuges and many other items essential in the manufacture of plutonium.

A separate facility built more recently is designed specifically for decontaminating Hanford's wide-ranging railroad and automative equipment. In operation less than a year, some 150 pieces including locomotives, flatcars and trucks have been cleaned of radiation by such means as jet sprays, high-pressure water, strong caustic solutions and sandblasting and put back on the line.

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Welding Show

The American Welding Society announces that practically 90 percent of all available space has been sold for its Annual Welding Exposition, which will be held April 18–20, 1961, in the Colesium, New York City. The Welding Show is one of the most highly specialized industrial shows in the United States. Only manufacturers of welding equipment, materials, or products closely related to welding, are permitted to exhibit. Attendance is similarly restricted to those with a primary interest in the welding field.

Despite the specialized nature of the Welding Show and the restrictions imposed, the number of exhibitors increases each year. Space requirements have grown steadily and the Exposition in New York promises to be the largest in the Society's history.

A Technical Meeting will be held concurrently, April 17–21, at the Commodore Hotel, New York. The American Welding Society will sponsor 22 technical sessions consisting of 65 papers.

Fire Protection

(from page 30)

around the shield. When the operator discovers a fire in the reel, he can depress a puncture lever which results in the flooding of the reel compartment with dry chemical.

The first such unit was installed about a year ago. Today, as each machine is taken out of service for overhaul, Semet-Solvay engineers are installing the new fire extinguishing system, until all units are so equipped.

Pictures by courtesy of Ansul Chemical Co.

Automation & Safety

Automation doesn't eliminate plant safety problems, Glenn Griffin of the National Safety Council told a University of Michigan industrial relations conference recently. He said automation has substantially reduced safety hazards in materials handling and ma-

(Continued on page 54)

A SUDDEN RUSH OF WATER
MODEL 8300
Drench shower and emergency eye-wash combination. Pull ring opens slow-self-closing valve releasing a torrent of water. Eye-wash is operated by foot treadle; twin fountain heads direct streams of soothing water into the eyes.

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(For details, use Key # B-14 on card on page 1)

PENTHOUSE FANS

New model penthouse fans have been announced by Standard Electric Mfg. Co. Adaptable for use in the modern horizontal building, they are available in sizes from 12" to 48", 1,500 to 22,000 cfm., with automatic shutters for weather protection. Leakproof construction.

For details, use **Key # DF-1** on inquiry card on page 1.

CONTINUOUS AIR SAMPLER

A new unit for both continuous duty and survey air sampling, up to 16 liters/minute, has been developed by Gelman Instrument Co. The 8 lb. unit consists of vacuum pump, flowmeter and filter holder, all built into a durable carrying case. Filter holders can be changed quickly in the field. This air sampler can not only be used for air pollution studies but also for other dust sampling work. In the electronics industry it can be used to monitor "white" rooms; in the chemical industry to check air cleaning systems, efficiency levels, and losses of valuable chemicals. Surgeons and medical researchers can use it for checking airborne pathogens. Atomic energy officials frequently use this type of device to check emission of radioactive aerosols.

For details, use **Key # DF-2** on inquiry card on page 1.

CHLORINE-IN-AIR DETECTOR

A field detector kit for the measurement of chlorine in air in concentrations ranging from one-half to 20 parts per million has been developed by Mine Safety Appliances Co. The new instrument employs an aspirator bulb for drawing samples across a "break-tip" detector tube containing an impregnated silica gel. The amount of chlorine in air is indicated by the proportional length of blue stain created by reaction of the chlorine with the silica gel. The instrument also permits sampling from remote locations. A maximum allowable chlorine concentration of one ppm. has been established by governmental industrial hygienists.

For details, use **Key # DF-3** on inquiry card on page 1.

AIR FILTERS TRIM TO SIZE

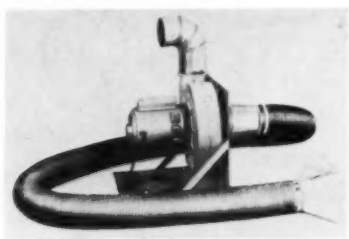
Air filter panels which can be cut to any desired size or shape are available from Research Products Corp. Originally developed as replacement units, Trim-To-Size filters offer convenience in clearing controls or obtaining tight fit in odd-sized air ducts and intakes. The filter layers are bonded to-

DUST & FUME CONTROL DEVELOPMENTS

gether to be completely self-supporting, and require no frames or holding brackets.

A renewable liquid adhesive coats the E Z Kleen filter medium. Since this saturates the accumulated dust, the filter retains its ability to trap impurities. A built-in germicidal detergent simplifies filter washing. Panels can be furnished pre-cut to specifications, from extremely small sizes up to 32″ by 60″.

For details, use **Key # DF-4** on inquiry card on page 1.



FUME EXHAUSTING SYSTEM

A new, portable system especially designed to exhaust fumes from welding, soldering and brazing operations has been developed by the Cincinnati Fan & Ventilator Co. The Model 500 Fume Master consists of a blower, 115/230 volt motor, switch and power cord on a universal mounting base, two 5′ sections of 4″ diameter flexible hose and a pick-up nozzle. It exhausts 600 cubic feet of air per minute. The hose may also be connected to convert the unit into a powerful blower. Blower housing and wheel are non-sparking cast aluminum; an explosion-proof motor can be supplied for handling hazardous fumes.

Other suggested uses include: cooling overloaded electrical equipment; ventilating man-holes, sewers and tanks; removing automobile exhaust fumes, etc. Extra sections of hose, optional gasoline engine drive and units with greater capacities are available.

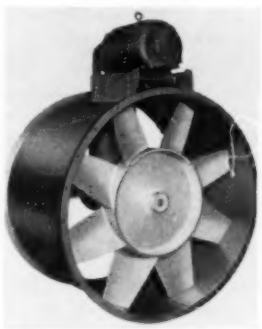
For details, use **Key # DF-5** on inquiry card on page 1.

NEW MINE AIR DUCTING

The fabrication of an entirely new form of air ducting called BEP ventilation tubing has been announced by B. E. P. Industrial Equipment. This flexible ducting is made from polyvinyl choride, a lightweight, hard wearing and economical material which is air-proof, waterproof and unaffected by dampness. It will not rot or corrode even under the most adverse conditions; does not support combustion and is self-extinguishing. Tube diameters are available to suit the restricted space in almost every type of underground roadway.

For ease of installation, the tubing is manufactured in 75-foot lengths, with supporting bands 2″ wide into which brass grommets are fitted. Lengths of tubing are joined before installing by slipping grommets over hooks. Since the tubing is flexible even at low temperatures, no elbows or joints are required to provide miles of safe efficient ventilation.

For details, use **Key # DF-6** on inquiry card on page 1.



TUBEAXIAL FAN LINE

Expansion of its line of belt-driven tubeaxial fans through addition of five sizes from 30″ through 60″ diameters, has been announced by Propellair Div. of Robbins & Myers. Ratings range from 17,000 to 84,700 cubic feet per minute, free air. The Factory Mutual approved fans are specifically designed for handling corrosive and explosive fumes, high temperature exhaust, abrasive- and dirt-laden air and high humidity exhaust. They are suitable for operation at static pressures to 4 inches of water.

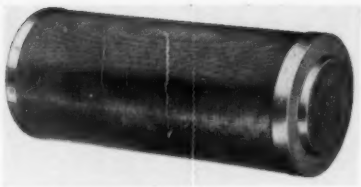
Each size fan is equipped with a new bearing assembly suitable for loads to 50 hp, permitting the user to change motor sizes should his ventilating system require modification at a later date. The motor mount is pre-drilled to accommodate any NEMA frame motor from 213 through 326U, making such changes quick and simple. The fans are equipped with spark-proof airfoil propellers cast from a special aluminum-magnesium alloy selected for high tensile and shock strength and dimensional stability.

For details, use **Key # DF-7** on inquiry card on page 1.

GLASS FIBER VENTILATORS

A full line of glass fiber centrifugal power ventilators designed for effective, virtually noiseless operation has been introduced by the Swartwout Co. According to the manufacturer, housings of this material have exceptional resistance to chemicals and fumes which usually ruin standard ventilator materials. Fiber-Aire ventilators feature high efficiency throat and outlet designs, stainless steel air flow guides, said to eliminate internal air shocks, and clean architectural lines. Chemical resistance characteristics are available from the manufacturer.

For details, use **Key # DF-8** on inquiry card on page 1.

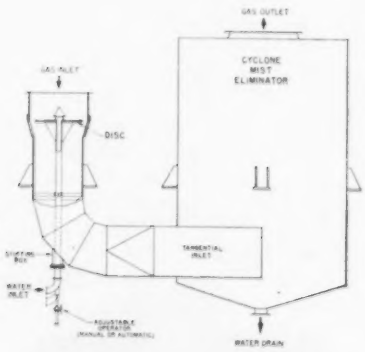


H_2S PURIFYING PROCESS

Using a new, specially impregnated type of activated carbon, Dorex canister-type purification equipment is reported by Connor Engineering Corp. to successfully remove troublesome hydrogen sulphide (H_2S), a gas previously impossible to control. The new carbon offers a retentivity of 30% for H_2S, compared with a previous low of 3%. This new development has wide industrial application and is of particular advantage to paper mills, metal working plants which use cutting oil, various industrial laboratories, rayon plants, petroleum refineries, and tanneries.

Because of the highly corrosive atmospheric conditions created by H_2S the Dorex Type H—#42 Plastic Canister is specifically suited for this kind of application. Having a heavy, ¾" carbon bed thickness, the canister is a heavy-duty unit designed to meet the most troublesome contaminated air problems.

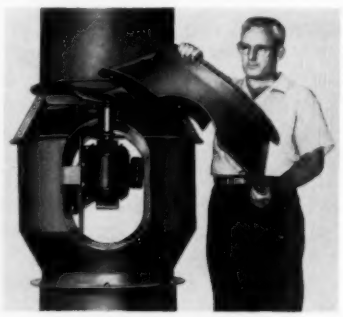
For details, use **Key # DF-9** on inquiry card on page 1.



FLOODED DISC-SCRUBBER

An adjustable flooded disc is one of the salient features of an unusual new scrubber developed by Research-Cottrell, Inc. High gas cleaning efficiency is maintained over a complete range of operating conditions by adjusting the flooded disc (left in illustration) automatically or manually to gas flows 50 percent higher or lower than normal. Present designs of the new scrubber are specifically adapted to collecting sub-micron fumes such as occur in chemical processes, steel-making oxygen converters, open hearth and blast furnaces.

For details, use **Key # DF-10** on inquiry card on page 1.



REMOVABLE FAN CONE REDUCES DOWNTIME

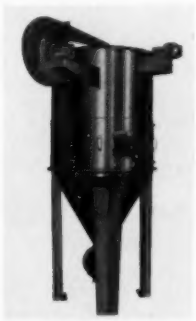
A duct fan designed with a removable cone to reduce maintenance and downtime costs has been introduced by DeBothezat Fans Div. This new feature makes it possible to take out the motor or fan wheel without removing the DeBothezat Bifurcator from the duct. The removable cone is not just an access door but the entire half of the cone unbolts and comes off. This will be especially advantageous for plants using duct fans to exhaust air containing abrasives, chemicals or other materials which cause excessive wear or corrosion on fan blades, according to the company.

For details, use **Key # DF-11** on inquiry card on page 1.

IMPROVED DUST FILTER

An improved design RJ dust filter is available from The Day Co. In all there are only three moving parts in the dust filter. The simplified design and construction of the unit minimizes maintenance, and increases filter life. The RJ will filter light or heavy grain loaded airstreams and effectively filter extremely fine, coarse, abrasive or non-abrasive dusts. It is designed to handle airstreams with temperatures as high as 300°F., and, in some cases, higher temperatures.

The most basic design change involves maintaining the porosity of the filtering media. A reverse air plenum (pressurized by a centrifugal blower) rotates in the top chamber of the filter. As this plenum cycles between filter sleeve openings a butterfly valve opens and high velocity, counter-flow air is discharged to remove accumulated dust from filter sleeve. Sleeves are counter-flowed one at a time, and the most recently cleaned sleeve is rendered inactive by trailing plate. Plenum rotates from sleeve to sleeve where the same action takes place. Available in five sizes in capacities ranging from



285 to 6400 cu. ft. of air per minute. High filtering rates (air to cloth ratios of up to 20 to 1) while operating at efficiencies of 99.99+%, are reported by the company.

For details, use **Key # DF-12** on inquiry card on page 1.

NITROGEN DIOXIDE DETECTOR

Nitrogen dioxide can be detected in concentrations as low as one-half part per million by a new portable instrument from Mine Safety Appliances Co. The detector combines a chemically-treated glass tube and an aspirator bulb to provide rapid, spot measurement of toxic concentrations from one-half to 50 ppm. The length of stain caused by reaction of nitrogen dioxide with the impregnated chemical is a measure of toxic concentration, and can be read in parts per

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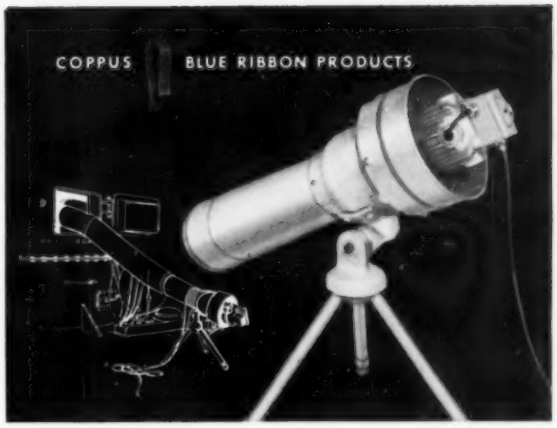
(For details, use Key # B-6 on card on page 1)



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COPPUS BLOWERS

(For details, use Key # B-7 on card on page 1)

million from a scale on the instrument. Sampling from a remote location is also possible. The maximum allowable concentration established by governmental industrial hygienists is five ppm.

Areas of exposure to nitrogen dioxide include exhausts from bright dipping and metal cleaning operations, electric arc welding, electroplating, engraving, and photogravure processes. Products of combustion in engine exhausts may contain concentrations as high as 88 ppm.

For details, use **Key # DF-13** on inquiry card on page 1.

DUST COLLECTOR LINE

Automatic dust collectors, whose modular design and self-cleaning action suit them to unlimited applications, have been announced by Torit Manufacturing Co. Continuous operating and cleaning cycles, coupled with high efficiency, make the units highly suitable for use in metal processing and manufacturing operations and in other industries where dust removal can improve working conditions, increase product quality and lengthen machinery life. Constructed of $3/16$" polished aluminum,

the Torit Automatic cleans itself three ways: 1) Periodic shaking of cloth filter tubes combined with reverse airflow through the filters. 2) Continuous removal of collected material by an adjustable screw conveyor at the base. 3) Discharge of collected material through a rotary feed valve.

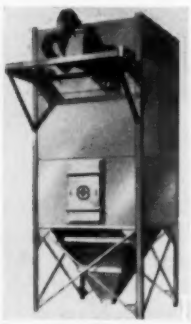
Modular sections permit adaptation to varied dust collection and space requirements, while lightweight, but strong, aluminum construction will solve many floor load problems. Its simple design and rugged construction limit maintenance needs and assure a long life. Eleven models are offered. The units are shipped knocked down for assembly on the job site. Power for the collector is supplied by a single ¾ hp. motor. The blower should be installed on the clean air side of the collector, insuring trouble-free operation and keeping the unit under suction at all times.

For details, use **Key # DF-14** on inquiry card on page 1.

PORTABLE VENTILATOR

A portable ventilating unit designed for a variety of applications, from dust and fume removal to circulating and spot cooling, has been developed by the Ilg Electric Ventilating Co. Lightweight and completely self-contained, the Type B Portable Electric Util-A-Set is available in two sizes, with 6″ or 8″ diameter hose. Reinforced flexible hose is available for remote ventilating or exhaust. The direct-connected fan motor is waterproof, with permanently lubricated ball bearings.

For details, use **Key # DF-15** on inquiry card on page 1.



INDUSTRIAL AIR FILTER

A new reverse-air jet dust filter, designed and produced by the Metal Products Division of Koppers Co., was recently announced. The filter, Model K Aeroturn, employs cloth felt, which, states the manufacturer, is the most effective medium in use for recovering industrial process dust. Mechanically, it features increased standardization and a reduction in the number of component parts. Special compositions of wool, Dacron and Orlon felt are available as filter media for various applications.

The newly-designed blow-ring assembly includes "low-rate" adjusting springs for maximum filter tube cleaning with minimum wear. Through automatic pressure control, the high velocity air-jet cleans excessive dust from the felt when necessary, without shut-down or bypassing. The filter operates only when the tubes need cleaning. For air pollution control and product dust recovery.

For details, use **Key # DF-16** on inquiry card on page 1.

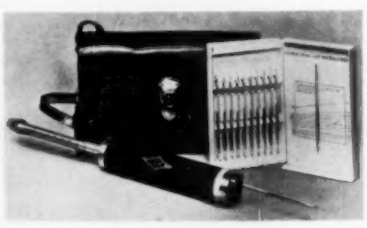
SWING-OUT EXHAUST SYSTEM

A versatile exhaust system designed for plants where duct work cannot be run to the ceiling is available from the Ammerman Company. Called the Swing-O-Way Exhaust System, it mounts on a wall or post and employs a flexible, retractable hose for 180 degree coverage of the shop floor up to thirty feet from the blower. This unit meets the needs of shops engaged in heavy welding and soldering operations, the repair of diesel trucks, tractors and construction equipment or in locations where traveling overhead cranes prevent the use of ceiling ducts.

For details, use **Key # DF-17** on inquiry card on page 1.

TOXIC GAS DETECTOR

On-the-spot determination of toxic gas and vapor concentrations is provided by the Kitagawa Unico Gas Detector. The Model #400 kit consists of a calibrated hand pump, and detector tubes for specific gases and vapors. The same pump and procedure are used for all determinations, and require no special training and skill to operate. According to the manufacturer, Union Industrial Equipment Corp., the average error of the detector tubes is less than 5% at 68 degrees F.



Each detector tube contains a chemical reagent which reacts with the gas being measured, producing a color stain which varies in length or intensity with the air concentration of the gas. Reagents are adsorbed on fine grain silica gel to assure distinct demarcation lines and uniform color changes. The detector pump is designed to draw air samples through the tubes at a reproducible fixed rate, so that everyone using the pump duplicates the calibration flow conditions.

For details, use **Key # DF-18** on inquiry card on page 1.

NEW FUME REMOVAL SYSTEM

A new gas-liquid scrubber has been announced by the Air Pollution Control Division of the John Wood Co. In this scrubber, the liquid is supported by a rising column of gas which maintains a flooded condition. The air breaks into tiny bubbles, about ⅛ inch in diameter, which are completely surrounded by the scrubbing liquid. This technique permits rapid and highly efficient absorption in a compactly designed unit. Each unit has two horizontal beds of ⅝-inch-size crushed rock rest-

ing on a screen support. The vessel shell is of sheet steel lined with polyvinyl chloride.

Tests on installations are reported to demonstrate that the John Wood Scrubber has an efficiency of virtually 100% in the removal of concentrated hydrochloric acid vapors, and 90 to 95% in a multi-unit installation treating concentrated fumes of nitrogen oxides. The scrubber has also been successful in removing fumes of acids, alcohol, acetone, ammonium chloride, hot vegetable oils, sulphur compounds, hot grease vapors and fine dusts.

For details, use **Key # DF-19** on inquiry card on page 1.

VACUUM FOR RADIOACTIVE & TOXIC DUST HANDLING

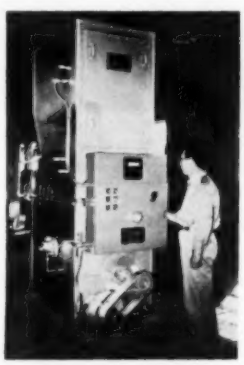
A portable vacuum cleaner for safe collection and handling of radioactive and toxic dusts is announced by Cambridge Filter Corp. Heart of the unit is a filter of special design, permitting easy removal and replacement in order to control the hazard of recontamination during filter change-over. Each filter is tested for a minimum efficiency of 99.97% on particle sizes of 0.3 microns. A special gasketed flange provides a tight air and dust seal for the filter.

Air is prefiltered through a high-efficiency Dacron bag. The bag is retained in a full open position during operation, providing for its safe removal from the vacuum cleaner without collapsing and redistributing collected dust. The collection tank has a recoverable capacity of 1⅔ bushels of dry material. The unit is also suitable for modified wet pickup.

For details, use **Key # DF-20** on inquiry card on page 1.

AUTOMATIC FUME DISPOSAL

Complete, one-step fume disposal is offered by Catalytic Combustion Corp. An integrated instrumentation system provides a fully automatic and safe operation. Utilizing metallic-supported catalysts to promote low-temperature oxidation or flameless combustion, the process converts noxious, hazardous, combustible fumes, odors and vapors, from a variety of manufacturing processes, to harmless, odorless, colorless carbon dioxide and water vapor. As the oxidation reaction occurs there is a release of the latent heat energy contained in the fumes. This clean heat is often available for profitable heat recovery. A typical unit consists of an insulated sheet-metal housing containing pre-heat burner, catalyst elements, and exhaust fan, with attached control panel.



For details, use **Key # DF-21** on inquiry card on page 1.

DUST SAMPLER

This bellows-type dust sampler offers a simple but efficient means of collecting samples from the air. The bellows of the Draeger Dust Sampler sucks dust-laden air through a membrane filter. The advantage of this type of filter is that it permits even separation and uniform distribution of the dust particles. Particles are deposited in airborne form and can be evaluated directly by physical and chemical methods. The bellows (type 31), is operated by one hand. Suction is obtained by the internal springs which expand the bellows after compression. Each stroke pumps a volume of 100 cc. at a reproducible rate. The filter holder screws to the suction socket on the intake side. Leather case holds the sampler and twelve numbered filter units. The unit is available from New Jersey Safety Equipment Co.

For details, use **Key # DF-22** on inquiry card on page 1.

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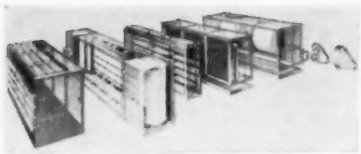


NEW AIR CONDITIONER LINE

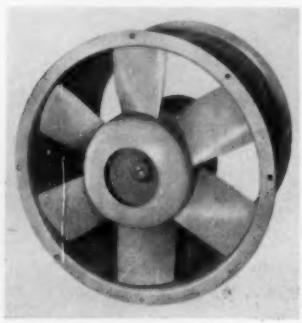
A line of central station air conditioning units, featuring Better Air filters, has been introduced by American Air Filter Co. The new Kennard/Nelson units offer a complete package; all components are designed, fabricated and tested by one manufacturer. A complete selection of both unit and automatic air filters are available as preselected and matched components of an air conditioning unit.

Several features have been incorporated into the basic unit design: all welded construction of heavy gauge steel, a double drain pan with one inch insulation between the pans, opposed blade dampers for uniform air distribtuion, and insulated panels with quick-opening access doors. Throwaway, permanent cleanable, and automatic filters are available, as well as a combination dry electrostatic filter with automatic renewable media. The new Kennard/Nelson line includes both horizontal and vertical models in 14 basic sizes, 500 cfm to 36,000 cfm. A full line of accessories is available.

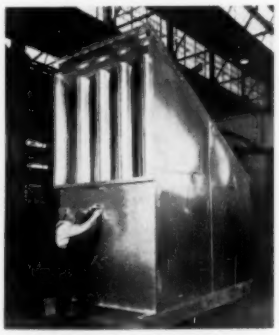
For details, use **Key # DF-23** on inquiry card on page 1.

AXIAL-FLOW FANS

A new line of direct-driven and belt-driven axial flow fans for general ventilation, dust and fume removal and similar services has been announced by L. J. Wing Mfg. Co. Designs are based upon heavy-duty units furnished for Navy and Merchant Marine use. Capacities at zero static pressure range from 3,220 to 72,500 cfm. Features of Wing fans include airfoil fan wheels, flanged heavy-gauge fan casings, sealed-prelubricated-self aligning bearings, and improved capacity per horsepower. A complete choice of motor types is available, and options include aluminum fan wheels, anti-corrosion materials and protective coatings, inlet and outlet cones, and adjustable sheaves for the belt-driven units.



For details, use **Key # DF-24** on inquiry card on page 1.



CEMENT KILN DUST COLLECTOR

A vertical tube mechanical dust collector, especially designed for cement plant applications, is available from American-Standard Industrial Div. Designated the American-Standard Series 345 dust collector, this unit contains 15-in. vertical steel inlet tubes with smooth wall surfaces and tapered outlets to eliminate reintrainment and reduce plugging. Although specifically designed for use in main kiln or clinker cooler cement plant installations, the collector is recommended for any application where tube plugging in smaller tube collectors is normally a problem. Units are of modular construction.

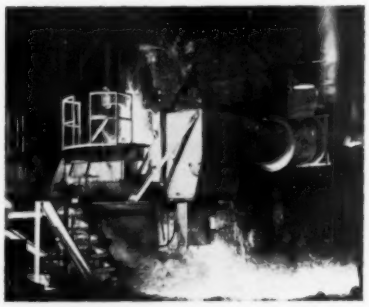
For details, use **Key # DF-25** on inquiry card on page 1.

PARTICLE ANALYZER

A self-contained instrument equally useful for research work and for monitoring the presence and distribution of particulate matter in the atmospheres of such areas as clean rooms for precision manufacture and assembly, is offered by Royco Instruments. Built in standard 19-in. modular panels integrated into a 31-in. high cabinet, the PC200A particle counter presents immediate displays of the numbers of particles present in 15 sub-ranges of sizes from 0.32 microns to 8.0 microns in diameter. Counts appear visually on decade counters, but can be recorded on digital tape or a strip-chart recorder, or both.

Automatic programming is included in the instrument to permit 0.3, 1, 3, or 10 minutes of monitoring on any selection or all of the sub-ranges in sequence. At the normal flowrate of 100 cc of air per minute, the maximum count rate without excessive coincidence loss is 7340 particles. There is no lower limit for counting; if no particles are present, the instrument will not respond. Factory calibration is performed using standardized particles, and subsequent field calibration is made through circuitry built in for the purpose.

For details, use **Key # DF-26** on inquiry card on page 1.



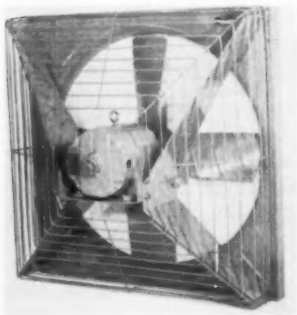
ARC FURNACE FUME CONTROL

Cloth-tube type collectors and furnace hoods designed to solve any electric arc furnace fume-collection problem are featured in fume control systems by Wheelabrator Corp. Three basic types of hooding are available: (1) furnace roof mounted local exhaust hoods, (2) overhead canopy hood mounted above the furnace, and (3) direct shell evacuation (removes fume directly from furnace shell through a water-cooled elbow).

With each type, collection of the fumes emitted from the furnace

takes place as closely as possible to the source, to keep room air out of the furnace and hold down exhaust air volume. Duct work from the furnace carries the fume-laden air stream into the high-efficiency Dustube collector. The company reports that these systems will meet any collection efficiency requirement, produce a clean stack, and withstand high heat and abrasion.

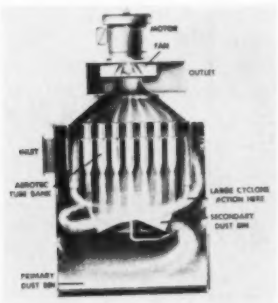
For details, use **Key # DF-27** on inquiry card on page 1.



DUST/FUME CONTROL FAN

A new line of heavy duty industrial exhaust fans, Type UH, is offered by American Coolair Corp. The fans feature large capacity and high performance against static pressure up to ⅝". This allows fan to be used with or without duct for dust and fume control. These units are especially suited where wall opening space is limited and high capacity required. Available with non-ferrous blades and explosion-proof motor suitable for all Class 1, Group D applications.

For details, use **Key # DF-28** on inquiry card on page 1.



IMPROVED DUST COLLECTOR

An improved integral dust collector with no filter to change is reported to handle high concentrations of dust, over a wide range of particle sizes, by using 2"-diameter tubes of new design installed in multiple to capacity required. Developed by Aerotec Industries to remove dust in grinding, buffing, polishing, milling and cutting operations, the new unit is said to provide high collection efficiency, constant suction at hood and no fire hazard. Dust laden air entering its inlet passes first through a primary cyclone for removal of large, heavy particles which are deposited in the primary bin. The air then travels through a secondary collector for final cleaning before passage through the fan and thence to the outlet.

A significant feature of this dust collector is its no-pressure-build-up characteristic. As a result, dust is continuously removed from the path of flow and discharges downward to a secondary receiver that requires only infrequent attention. The new integral collector is available in seven standard sizes ranging from 300 to 2100 cfm capacity. Special assemblies available for such problems as beryllium dust collection.

For details, use **Key # DF-29** on inquiry card on page 1.

PORTABLE DUST COLLECTOR

Safety features of a new cyclone separator principle unit offered by Cincinnati Fan and Ventilator Co. include clean air return, no exposed moving parts and a spark-proof, cast aluminum fan driven by a continuous duty ½-horsepower motor.

Dust-Master model "50" is designed to fit on a 20 or 24-gallon waste can. The cyclone separator directs the debris-laden air, around the inside of the drum. Heavy particles drop out of the air and fall to the bottom before they reach the fan, preventing fan damage. Extra fine dust is trapped in the after-filter cloth bag. Dust and mist collectors of special sizes and capacities to fit on or inside machines are also available.

For details, use **Key # DF-30** on inquiry card on page 1.

PORTABLE VENTILATOR

Designed for ventilation of large tanks or other confined areas, the Tubeaxial Blower TA-16, mounted on pipe skid rails, is readily portable, or may be permanently installed. The blower, a product of Coppus Engineering Corp., has an adapter outlet suitable for attaching 16" diameter ventilating tubing. When used with non-collapsible suction tubing, the inlet can be provided with an adapter in place of the inlet bell. Adapter and bell are not required when unit is installed in a 16" diameter duct. Cast aluminum fan has non-overload characteristics. Manual motor starter has overload protection.

For details, use **Key # DF-31** on inquiry card on page 1.

RIP SAW ACCIDENTS? ? ? . . . .
Now! Dangerous circular table saw injuries eliminated by new amazing visual Brett-Guard patented SEE-THRU safety tool! Fits all rip saws. Installs easily! Features TRANSPARENT PLEXIGLAS SHIELD. Covers saw blade yet allows FULL VISION & complete accuracy. Send for FREE FOLDER today!
Free Loan 16 MM Sound Saw Safety Movie Available.
BRETT-GUARD CORP.
ENGLEWOOD, NEW JERSEY **Lowell 8-2600**

(For details, use Key # B-9 on card on page 1)

Gimmicks For Your Safety Program

Bringing the attention of employees to the safety program, or keeping that attention once you have it, requires an occasional "Gimmick." Here are some ideas suggested by the Institute of Scrap Iron & Steel, Inc.

1. Place a lighted red lantern at any spot where an accident occurs. Tell the men what it means, and leave it there for a week.

2. Write a safety slogan on a sheet of paper. Tear it in half and mail one-half to each of two employees with a note advising that you will give each man a dollar when they bring you the completed message. To do so, they must inquire of other workers to find the companion piece.

3. Place a safety poster on the bulletin board upside down. (Remove it after two or three days.)

4. Paint a hard hat in a brilliant green color. Give it to a different man each week, appointing him as the "Safety Man" for the week. (He deserves a slight bonus, don't you think?)

5. Obtain a box into which you place a five-dollar bill. If there have been no disabling injuries at the end of the month, let each man choose a key to try the lock—only one key fits. If there is a disabling injury, no-one gets a chance at it.

6. Weld cross braces to two round auto headlight rims (or other large circles) to make them look like goggles. Paint aluminum color and mount on sign "Wear your goggles."

Rate Reductions
(from page 34)

and be willing to conduct prescribed safety inspections on a quarterly basis, with an additional annual inspection to be carried out by the Fire Rating Bureau.

"The Plan is optional for the eligible buyers," the Rating Bureau said. "We know that consistent safety precautions will reduce losses and we feel that those policy buyers who are willing to provide regular attention to safety requirements should thereby earn a lower fire insurance rate."

The deductible clause applies to all perils except fire and lightning, the Bureau said. It provides that the insurance buyer would pay the first $100 on each loss per building (including contents) and $100 per loss for personal property in the open, but not to exceed $1,000 per occurrence.

The Rating Bureau emphasized that the new Plan has many details that will have a slightly different application on each insured property, such as degree of fire protection in the area and the type of building construction, so that specific information on savings possible cannot be calculated until each risk is analyzed.

Examples of eligible properties, the Bureau said, are: schools, colleges and universities, hospitals, sanitariums, alms houses, orphanages, infirmaries, homes for the aged, churches, convents, chapels, monasteries, city halls, community buildings, armories and police and fire houses. Where such institutions are operated by private persons, they are also eligible.

"Tell him that respirator fits over the nose."

Automation Safety
(from page 45)

chine feeding. But on-the-job hazards have increased in maintenance work.

"Some men are overcome by the urgency that results from a machine's setting the pace, and the pace, and the feeling that nothing must stop it.

"Others may become bored and do dangerous things just to provide a little interest and excitement. This is a real problem for all industry, not just automated plants. For example, Army truck drivers in slow moving convoys used to have rear-end collisions because they were driving with their feet hanging out the window."

Boredom and frustration may prove important problems for isolated workers in automated plants, he continued.

Maintenance Safety

"One very important hazard that exists in automated operations which does not exist in old-fashioned, single machine operations is that of the lines being shut down and then started up while somebody is working on them or is in a position where he can be caught.

"In automated plants, too, the importance of keeping the line running is so great that maintenance men will try to make minor repairs and adjustments while the machinery is still running. One way to eliminate this is the good old safety practice of scheduling preventive maintenance."

Aid to Safety

While present reports are "meager," Griffin noted there is some evidence that over-all safety rates may improve with automation. One company reported a 60 percent drop in the accident rate in the four years following automation of a motor block machining operation.

Another firm said automation virtually eliminated hernia, eye troubles, and foot injuries resulting from on-the-job accidents. And a study of 12 automated plants by the Harvard Business School found several reporting safety advantages. None reported their operations had become more hazardous.

While automation has eliminated many hazards of operations once performed manually, catastrophes can still occur, Griffin continued. Last October, a fully automated aniline plant blew up without warning, killing 15 and injuring 45. The cause still is not known.

Edited by HENRY M. GROSMAN
Counselor at Law, Newark, N. J.

MEMBER . . . . . .
Master Superior Court, New Jersey American Bar Ass'n, New Jersey Bar Ass'n, Chairman, Committee on Workmen's Compensation, New Jersey Bar Association National Federation Insurance Counsel Past Commander, American Legion, Post 10, ... Newark, N. J.

DEATH BENEFITS—Causal Connection between Hernia Operation and Death

An order denying an award of death benefits was affirmed inasmuch as there was competent evidence supporting the industrial court's finding that the decedent's fatal heart attack was not connected with his hernia accident and surgical operation. The decedent, who had previously enjoyed good health, underwent surgery for the repair of a bilateral inguinal hernia. His recovery appeared to be progressing normally and within four months after the operation he was going to return to work. About two and one-half months after the operation, however, the decedent, after applying some sealer to the roof of his vacation cottage, suffered a sudden heart attack and died. The industrial court denied death benefits on the ground of lack of causal connection and the decision was sustained on appeal. Medical witnesses, on behalf of the widow, attributed death to a massive pulmonary thrombo-embolism, which condition they described as a post-operative complication said to arise from the trauma incident to surgical procedures. On the other hand, medical witnesses for the employer testified as to lack of causal connection because of the decedent's apparently normal recovery and the long duration of time between the operation and the attack. They contended that death was due solely to pre-existing conditions or a spontaneous attack. This latter testimony was sufficient to support the lower court's finding. It was ruled that it was not necessary for the employer to establish the cause of death but only to present sufficient evidence showing that death was not related to the hernia accident or operation. Affirmed.

Greer vs. Sinclair Pipe Line Company, Oklahoma Supreme Court. No. 38722. October 26, 1960.

COURSE OF EMPLOYMENT—Construction Employee Injured While Fighting Forest Fire

A construction employee who was injured while being required to assist government employees in the fighting of a forest fire was not entitled to workmen's compensation from his regular employer since he was impliedly an employee of the federal government at the time of the injury. Claimant was employed as a heavy equipment operator-foreman by a construction company. A fire suppression ranger notified the claimant's manager of a fire which was about two miles from the construction site, and that he wanted the use of some heavy equipment and operators. The manager in turn notified the claimant that he was to take the equipment to the scene of the fire "on orders from officers of the forestry service. . . ." While the equipment was being used, a bulldozer went off the side of a canyon and, while claimant was hooking a cable to the tractor with which to pull it out, he injured his back. The commission made an award of compensation, but on appeal the award was set aside because the claimant was not in the course of his employment at the time of the injury; the claimant was employed by and was under the direction and control of the government at the time the injury took place. Reversed.

Argonaut Insurance Co. vs. Industrial Accident Commission of California. California Supreme Court. No. 26002. October 22, 1960.

EXCLUSIVE REMEDY—Employment Relationship—Loaned Servant Doctrine Abrogated by Statute

Where the plaintiff's services had been temporarily lent by his employer to a third party, that party was not the plaintiff's "employer" within the meaning of the workmen's compensation act. Consequently, the provisions of the act had not replaced the right of the plaintiff to sue that third party at common law. The defendant answered the plaintiff's complaint, which alleged that the plaintiff had been lent by his regular employer to the defendant to assist in the

repair of a diesel engine and that the injuries complained of were sustained while the plaintiff was under the "direction and control" of the defendant. The court sustained an objection by the defense on the basis of a statute recently construed by the Connecticut Supreme Court. "The right of direction and control . . . is no longer the test in determining the question of liability for compensation, but such liability is in all cases imposed upon the employer who has 'temporarily lent or let on hire' to another the services of one of his employees."

De Paola vs. Cummins Diesel Engines of Connecticut. Connecticut Superior Court, New Haven County. No. 88731. July 11, 1960.

SETTLEMENT OF WRONGFUL DEATH ACTION—Without Consent of Employer as Bar to Compensation Claim —Waiver of Exclusive Jurisdiction Under Federal Employers' Liability Act

A decedent's widow was entitled to a death award under the workmen's compensation act; a settlement of a wrongful death action with a third party, without the employer's consent, did not bar her right to an award because the action was brought as the result of an accident which was unrelated to the prior industrial accident or the subsequent death. In addition the board had jurisdiction to make the award because the employer had waived its right to assert the exclusive jurisdiction of the Federal Employers' Liability Act.

The decedent had been injured in the course of his employment and had received compensation for total disability. More than two years later, he was injured in an automobile accident which, as found by the board, was not related to his death. About two months after the auto accident, the decedent died as a result of the injuries sustained in the earlier industrial accident. The widow, as administratrix of the estate, brought a death action against the driver of the other vehicle involved in the collision and also filed a claim with the board for death benefits. While the compensation claim was pending, she settled the death action for $12,000. Subsequently, the board made a death award to the widow, from which the employer appealed contending that Section 29 of the compensation act barred the claim because the widow settled the so-called third-party action without its consent, and that exclusive jurisdiction was under the FELA.

The lower court accepted the employer's first contention and set aside the award; however, on the instant appeal, the award was reinstated. It was ruled that Section 29 only has application where the third party's wrongful act results in a work-connected injury. Therefore, the widow was entitled to settle the action without the employer's consent because the accident was not connected with the occupational injury nor was it related to the subsequent death. Even though the industrial accident occurred while the decedent was working in interstate commerce, the employer waived its interstate rights under the FELA by first asserting the defense of lack of jurisdiction more than four years after the industrial accident, four years after compensation was first awarded and paid, and twenty-one months after the decedent's death. Reversed.

Meachem vs. New York Central Railroad Co., New York Court of Appeals. No. 134. October 21, 1960.

Off Beat Accidents Off the Job

Take it from the Du Pont employee who sprained his wrist trying to swat a mosquito: off-the-job accidents can happen in the strangest ways.

In this sentiment, the would-be mosquito killer would doubtless be joined by such other company employees as the golfer who was struck in the head by a putter, another golfer who slipped in a hole in the rough, a vacationer who fell off the boardwalk, and the intrepid Du Ponter who was injured while performing on a trampoline.

These victims, along with almost 1,500 other company employees who sustained time-losing injuries off the job in a recent nine months' period, make up a problem the Du Pont Company is earnestly trying to do something about. Such injuries, while they may happen in humorous ways, are anything but funny to the participants, or to their employers who are constantly striving for a perfect safety performance both on and off the job.

Safer at Work

The Du Pont Company, which has won the Award of Honor of the National Safety Council fifteen times, says that its employees are much safer at work than they are off the job. In recent years, the company is laying more and more stress on improving off-the-job safety. One way of calling employees' attention to the need for better performance is by releasing statistics showing the causes of time-losing injuries.

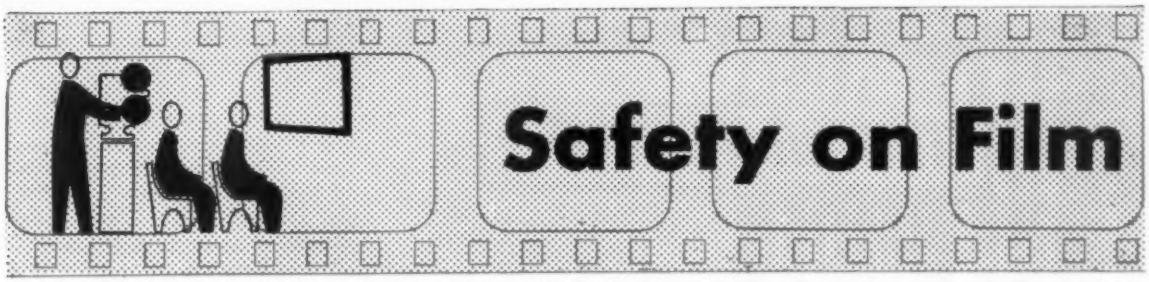
A recent survey covers three months' off-the-job injuries for just one group of company employees, comprising about 10 percent of the work force. It provides a reasonably accurate cross-section of what can happen to the average American at home, on the road, and at play.

Injuries From Falls

Twenty-eight persons, the survey showed, were injured in falls. Six fell down stairs. Two fell off horses. Three fell off curbs. One fell off a roof. One slipped in the mud during a ball game and two, the report states, indicated only that they "fell in public" apparently causing bruised feelings as well as bodies.

Travel accidents caused injury to 13, one of which was fatal. Twelve of these were automobile accidents, and one woman was injured when the motorboat she was in was hit by a tanker.

Ten were injured while participating in active sports, including two persons wrestling and one person bowling. Five were injured when they were struck by various objects, seven sustained injuries due to improper lifting, four were burned, and there were some miscellaneous mishaps including bee stings and poison ivy.



Fire Safety Films

A new 24 page catalogue of U. S. Government films, available free, describes many motion pictures depicting safety measures in the shop and on the highway, including a series of seven films in the "Accidents Don't Happen" series produced by the National Film Board of Canada. United World Films, Inc., distributor of U. S. Government films, is located at 1445 Park Avenue, New York 29, N. Y.

Training Film On Head Protection

A new safety training film called "The Shell Game" has been announced by E. D. Bullard Co. Showings are offered at no cost. The film is designed to demonstrate how to wear and care for safety hats and caps to assure maximum protection and long life. The strip film, in full color and with sound recording, traces the history of head protection and shows how modern head protection is engineered. For details about the film, write to: E. D. Bullard Co., 2680 Bridgeway, Sausalito, Calif.

Free Technical Films

Modern Talking Picture Service has published a new guide to technical films for use by business, industry, and commercial and engineering colleges. More than 130 films dealing with specific technical subjects are offered on a free loan basis. Titled "Modern's Catalog of Free Loan Technical Films," the listing includes topics in the realm of the pure sciences as well as those affecting practical considerations of production and distribution. Almost all basic American industries are represented by one or more films described in the catalog.

Free Loan Basis

The films are being offered free to adult groups connected with business or industry, or to study groups in business or engineering colleges. All are 16mm-sound films, from a quarter-hour to a half-hour in length. Most are in color. Major corporations in various industries, as well as trade associations representing industrial and commercial groups, are sponsoring distribution of the films.

All films listed in the catalog will be available from Modern Talking Picture Service via 30 regional film libraries throughout the country. Copies of the catalog may be obtained without charge by writing to Modern at 3 East 54th St., New York 22, N. Y., or any of the company's film libraries.

School Fire Film

A new film showing teachers and school officials what to do to avert tragedy during the first critical minute after a school fire is discovered has been released by Aetna Casualty and Surety Company. Titled "Seconds to Safety," the 15-minute, color movie stresses the necessity for evacuating students in a matter of seconds rather than minutes if loss of life is to be avoided.

Produced in cooperation with school and fire department officials at Wethersfield, Conn., the film details steps of a fire drill procedure that has enabled one school to evacuate 510 children in just 52 seconds after the alarm sounds.

The Biggest Killers

The film points out that smoke and super-heated air, the biggest killers in school fires, can make the atmosphere deadly throughout a building even before flames are widespread, thus increasing the need for a well-organized, thoroughly-drilled evacuation plan.

"Seconds to Safety" will be distributed nationally on a free-loan basis for showings before school, fire department and safety groups, and other community organizations. The film may be obtained by writing to the Information & Education Department, Aetna Casualty & Surety Company, Hartford 15, Conn.

Insurance Film Guide

A new directory of films about property and casualty insurance and surety has been published by the Insurance Information Institute. The directory lists 16 mm. and 35 mm. films and film strips. It describes each briefly, specifying the audience the film is designed to interest and where the film may be obtained. Copies of the directory are available from Insurance Information Institute, 60 John St., New York 38, N. Y.

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Workmen's Compensation Coverage

Secretary of Labor James P. Mitchell said that approximately 80 percent of the Nation's wage earners are protected under workmen's compensation laws.

Substantial improvements have been made in the last 7 years, the Secretary said in releasing a new publication entitled "State Workmen's Compensation Laws." For example, he noted that over two-thirds of the States have broadened these laws since 1953 to include additional occupations, groups of workers, and types of disabilities, such as radiation and other occupational diseases.

Another significant trend during the period, Mr. Mitchell said, has been in the level of benefits paid. Three times as many laws provide maximum benefits of $40 or more a week for temporary total disability. Over six times as many as in 1953 provide maximum weekly benefits of $50 or more.

"But despite improvements of the last few years," Secretary Mitchell declared, "thousands remain without compensation for injuries on the job. Many of these unprotected workers are among the two million persons each year who suffer occupational injuries and deaths."

The bulletin released by Mr. Mitchell revises previous bulletins on this subject and brings up to date information on workers, jobs, injuries and diseases covered by the law, and on the amount and duration of benefits.

According to the publication, 30 jurisdictions currently require an employer to have workmen's compensation insurance. The laws of 25 States do not exempt employers having fewer than a specified number of workers.

In addition, 34 laws have full coverage of occupational diseases and 40 laws provide full medical benefits for the injured workers.

Single copies of the new publication may be obtained without charge, as long as the supply lasts, from the Bureau of Labor Standards, U. S. Department of Labor, Washington 25, D. C. Additional copies may be purchased from the Superintendent of Documents, U. S. Government Printing Office, at 30 cents each.

Pamphlets on Radiation Effects

The Atomic Energy Commission has published the first in a series of pamphlets describing its life sciences research program. The purpose is to acquaint scientists, students and interested members of the public with the bio-medical program, its objectives and needs. The Commission's bio-medical program is directed toward the accumulation of knowledge of the effects of nuclear radiation from any source—natural or man-made—upon living things.

The first booklet, "Marine Sciences Reasearch" (TID 4040), was prepared under the direction of the Commission's Division of Biology and Medicine. It summarizes work in progress at thirteen institutions through twenty-eight research contracts in the following major areas: (1) studies in and around waste disposal areas; (2) circulation and mixing in estuaries and coastal waters; (3) open ocean research; (4) sedimentation; and (5) distribution of elements by organisms.

The second and third booklet in this series will feature the Commission's "Genetics Research" and "Cancer Research" programs. Later additions to this series will cover other portions of the Commission's bio-medical research program.

The publication "Marine Sciences Research" (TID 4040) is available from the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C., at 50¢ per copy.

Lift Truck Safety

Recommended safe practices and procedures in the operation and service of fork lift trucks are described by the Manufacturing Chemists' Association in the sixth in the Association's series of industrial safety guides.

The pamphlet (SG-6) emphasizes that use of fork lift trucks, whether powered electrically, by diesel, gasoline or liquified petroleum gas, in hazardous areas in which flammable gases, vapors or dusts may be present, may require special safety features and that provisions of Standard No. 505 National Fire Protection Association must be strictly enforced.

Use of these powered machines in warehouses and industrial plants can result in a marked saving of time and physical effort, the Safety Guide stated. "However, serious accidents have resulted from misuse and therefore rigid safety regulations must be set up and followed."

The purpose of the safety guide, the Association stated, "is to give assistance in setting up these safety regulations and through emphasis on responsibility, on employee training, on equipment maintenance, and on correct application of each type of fork lift truck, to contribute toward greater safety in the chemical manufacturing industry."

Copies of this pamphlet are available at the MCA office, 1825 Connecticut Avenue, N. W., Washington, D. C., for 20¢ each.

inside the trade

Appointment of *Laurence A. Keim* as manager of technical service—automotive sales, for the glass division of *PITTSBURGH PLATE GLASS CO.* has been announced by Marvin W. Marshall, director of automotive sales. Mr. Keim will be responsible for the glass division's technical and engineering services related to the automobile industry and coordinate activities between research and manufacturing departments and automotive customers. He will be headquartered in Detroit, Michigan, in his new capacity.

Hilger and Watts, the largest scientific instrument maker in England, has appointed *GELMAN INSTRUMENT CO.* as the sole American distributor of products made by Hilger's Infra-Red Development Division. Gelman will sell infra-red gas analyzers and other electronic instruments made by Hilger.

TECT, INC. of Northvale, N. J. has announced the appointment of *Wesley W. Guptill* as General Sales Manager. Mr. Guptill will assume full responsibility for the marketing and distribution of safety solvents, detergents and marine products throughout the United States and Canada. Mr. Guptill has a degree in Business Administration from Dickinson College, was Sales Manager in the Systems Division of Remington Rand, and General Sales Manager with Pathe, Inc. and Thermway Industries, Inc.

The Scientific and Process Instruments Division of BECKMAN INSTRUMENTS, INC., has opened a Boston Sales Office in Cambridge. The address of the new office is: Beckman Instruments, Inc., 12 Norfolk St., Cambridge 39, Mass. The new sales Office in Cambridge is staffed by *Robert Sankey,* Sales Engineer for the firm's scientific analytical instruments, and *Robert Stillman,* service engineer.

Joseph P. Addonizio, Manager of Beckman's Eastern Region, has also announced that the Buffalo Regional Sales Office (formerly at 3053 Main St.) has been moved to a new location at 2451 Wehrle Drive, Buffalo 21, New York.

The office is staffed by *Charles D. Kennedy,* sales engineer for laboratory instruments; *Joseph Hauber,* sales engineer for process instruments; and *Frank H. Goodwin,* service engineer.

The appointment of *Richard L. Moody* as assistant sales manager is announced by T. L. Peterson, sales manager of the *WILSON RUBBER CO.,* Canton, Ohio, a division of Becton, Dickinson and Company, an exclusive manufacturer of rubber industrial gloves.

Moody, who has been a sales engineer for Wilson Rubber since 1958, will work directly with the Company's sales engineers and wholesale distributors. He previously had had considerable sales experience with Hood Rubber Co. and Gottwik Sales Co.

A native of Quincy, Mass., he received his Bachelor of Science Degree in business administration from Boston College.

Engle's, 46 West Church St., Orlando, Florida has been appointed by *AMPCO METAL, INC.* to distribute the firm's line of non-sparking hand tools. The non-sparking characteristic of these copper-base alloy tools eliminates the danger of fires and explosions caused by ordinary "hot" sparks.

John W. Eder, Jr.

John W. Eder, Jr. has been appointed general sales manager of *CHICAGO EYE SHIELD CO.,* it was announced by Robert Malcom, Jr., Chairman of the Board. Eder, a graduate of the University of Southern California School of Business Administration, formerly was assistant sales manager of the company. He has been associated with the safety equipment industry for several years.

A. Campbell, Jr. has been promoted to Manager of Sales and Marketing Services for the *Thermoid Division of H. K. PORTER COMPANY, INC.,* it was announced by G. P. Robers, General Sales Manager for Thermoid.

Campbell, during his 23 years with the Division, has served in various sales and customer service capacities. In his new position he will head up the new Sales and Marketing Services Department at the division sales office in Trenton, New Jersey.

The Directors of *BROOKS & PERKINS, INC.,* have named *Edward H. Perkins, Jr.,* Executive Vice-President and General Manager of the Company, according to an announcement by E. L. Ladd, Company president. Perkins was formerly Vice-President General Manager In the past few years he has held various positions in the company. Prior to joining Brooks & Perkins, he was a Sales Engineer with The Aluminum Company of America. He is a graduate, both in Liberal Arts and in Metallurgical Engineering, of the University of Michigan.

Ladd has also announced the appointment of *W. O. Chamberlin, Jr.,* as Director of Marketing. Chamberlin comes to B&P from Cook Technological Center, Cook Electric Co., where he was Director of Advance Planning, responsible for sales, contract administration and field office activities.

Appointment of *John W. German* as manager, building product sales, for the merchandising division of *PITTSBURGH PLATE GLASS CO.* is announced by F. T. Hughes, vice president and general manager, merchandising division. He succeeds George L. West who is retiring after 31 years' service. Mr. German transferred to Pittsburgh earlier this year as assistant manager of building products sales from the Akron, Ohio, distributing branch where he served as manager since 1958.

Appointment of *Norman B. Hall* as southeastern regional sales manager is announced by *MEDICAL SUPPLY CO.,* Rockford, Illinois, manufacturer of first aid equipment and supplies for industry. Hall will be headquartering in Atlanta, Georgia, and territory under his supervision will include the states of Mississippi, Tennessee, Alabama, North Carolina, South Carolina, Georgia and Florida.

BAR-RAY PRODUCTS, INC. has announced a change in address for its Los Angeles warehouse. The new name and address is: Marvin Stevens Associates, 2311 West 9th St., Los Angeles 6, Calif. The territory covered will be the States of: Arizona, California, Idaho, Nevada, New Mexico, Oregon, Texas, Utah, Washington and Wyoming.

J. D. O'Brien, Director of Sales, for the *R. D. WERNER CO., INC.,* manufacturers of aluminum ladders and other household products, announces that *Herbert Carpenter,* Industrial Design Consultant, has restyled their regular lines and is developing a new promotional line of household ladders. Mr. Carpenter is responsible

for the design and development of many brand name products in the small appliance, household and building field.

Kenneth A. Wallace, Jr. has been appointed to the position of sales engineer for *SWARTWOUT FABRICATORS, INC.*, manufacturers of ventilating equipment for industrial and commercial buildings. According to R. E. Parshall, Swartwout sales manager, the twenty-six year old former resident of Flint, Michigan, has already had considerable experience in designing and selling ventilation systems and equipment.

G. V. Patterson, Swartwout president, has also announced the acquisition of April Showers, Inc., producers of roof sprinkler cooling systems. Acquired from Leonard Holder, inventor of the system and president of the former company, April Showers will operate as a division of Swartwout Fabricators. Manufacturing and engineering for both domestic and foreign sales will be done in Swartwout's Kokomo, Indiana, plant.

William J. Shively has been named market planning manager to assist *JOHNSON'S WAX* subsidiaries and manufacturing distributors in the company's overseas marketing region that includes Europe, Africa and the Near East. He will serve on the London staff of Samuel C. Johnson, vice president and director of the region.

Shively, a graduate of Colgate University and the Harvard Graduate School of Business Administration, previously was an export sales representative, international administrative assistant, new products coordinator and an assistant product manager. He also served abroad for three years at the company's subsidiary in England.

Four new officers and directors have been appointed to the management of *PRESSURE PRODUCTS CO.*, Charleston, W. Va., safety-controls manufacturer. The appointments are announced by M. M. Alexander, out-going president. The new appointees are *Charles E. Meginnis*, president and chief executive officer; *Eber W. Light, Jr.*, corporate secretary and *Kelley E. Reed*, treasurer. *Ben Sherman* is the newly-appointed director.

PresSure Products Company is a supplier of safety and manufacturing devices to chemical, petroleum, pharmaceutical and related industries. Founded in 1957, the firm now has distribution and sales-service centers in 14 principal cities. Main manufacturing facilities are located in Charleston.

CRESCENT METAL PRODUCTS, INC., the nation's largest producer of mobile food handling and service equipment, announced the completion of an extensive consolidation program. Three separately located manufacturing and office facilities have been transferred into a newly remodeled 150,000 square feet plant at 12711 Taft Avenue, Cleveland, Ohio. George T. Baggott, President, said that the research and engineering divisions will continue their efforts of adopting standardized food handling equipment to customer's specialized requirements, such as the recent introduction of a new mobile cafeteria for small industrial plants and offices.

W. Ben Flanigin, Vice President-Sales of *THE GAMEWELL COMPANY*, announces the assignment of *John B. Russell* as Sales Engineer in the state of Connecticut for the company's line of municipal and industrial fire alarm systems, police systems and precision electromechanical equipment; the Rockwood Sprinkler Division's special hazard fire fighting equipment, sprinkler systems and industrial ball valves; and the Eagle Signal Division's safety and traffic control equipment and industrial timers.

Mr. Russell has been with Gamewell since 1957 as Assistant to the Industrial Sales Manager. Prior to this, he represented the Edwards Company as Sales Engineer in Southeast Florida. For several years previously, he was sales manager of the S. H. Couch Company, North Quincy, Massachusetts.

Charles H. Davis has joined the Chicago office of the *DAY SALES CO.* as a sales engineer. Davis will be associated with D. J. Dowd, District Manager of Day's Chicago office. This office handles sales in the Northern Illinois, Northern Indiana, Southern Wisconsin and Eastern Iowa territory. Throughout this area the company sells the nationally-distributed dust control systems and equipment, bulk material storage equipment, and pneumatic conveying equipment manufactured by The Day Company of Minneapolis.

Safety Appointments

Robert C. Thorburn has been named manager of a newly-formed nuclear safety sub-section at General Electric's Vallecitos Atomic Laboratory. His new duties will include responsibility for nuclear safety for the entire Atomic Power Equipment Department and for AEC licensing procedures. He also will be responsible for reactor technical operations and reactor operations physics functions at Vallecitos. Thorburn was formerly manager-health and safety in APED's employee and community relations section.

Colonel Richard H. Peter has been assigned to command the U. S. Army Ordnance Field Safety Office at Jeffersonville, Indiana. This office is interested in the safety of all phases of explosives and ammunition manufacture, testing, storage and transportation, as well as fire prevention, industrial and motor vehicle safety at all Ordnance Corps establishments in the continental United States. It also operates the School for Ordnance Safety, offering courses in guided missile, rocket, ammunition, industrial and motor vehicle safety.

Colonel Peter succeeds Colonel Ronald B. Currens, retiring. Colonel Currens has held this command since December 1955. Colonel Peter was transferred to the Ordnance Field Safety Office from Fort Hood, Texas, where he served as Post Ordnance Officer and Commanding Officer of the 2nd Ordnance Group.

Newly assigned as Safety Director of the US Army General Depot, in Kaiserslautern, Germany, is *Joseph A. Palinsky*, of Binghamton, N. Y. Prior to this assignment Mr. Palinsky was Safety Director at the Richmond, Va., Quartermaster Depot. He previously had served as Safety Director at the Military Subsistence Supply Agency and Army Administration Center, Chicago and at the US Army Quartermaster Depots, Nahbollenbach and Giessen, Germany.

Mr. Palinsky attended the Center for Safety Education at New York University and entered accident prevention work in 1948 with the US Army. A member of the American Society of Safety Engineers, he helped organize the European-African-Middle Eastern Society of Safety Engineers.

While at the Richmond Quartermaster Depot he was active in Community safety work and served as a member of the Board of Control of the Richmond Area Safety Council. He also served as chairman of the Richmond Area Federal Safety Council and vice-Chairman of the Federal Section, Virginia Safety Association.

Appointment of *Thomas H. Bullard* as Chairman of the Industrial Safety Committee for the current program year is announced by Harry H. Verdier, Executive Director of the Safety Council, Chamber of Commerce of Greater Philadelphia. He is also serving on the Council's Board of Governors, and was recently elected Vice Chairman, Power Press & Forging Section, Executive Committee, National Safety Council on October 18th.

Mr. Bullard is Safety Manager-Company-wide for The Budd Company, responsible for employee safety in both the Hunting Park and Red Lion plants in Philadelphia, as well as the Budd plants in Gary, Indiana and Detroit. He has long been active in the affairs of both the local Council and the National Safety Council, and in his efforts for The Budd Company he has built a consistently improving record in accident-prevention for the past 11 years.

Bullard is Past-President, Philadelphia Chapter, American Society of Safety Engineers and is now serving on Industrial Conference, National Safety Council.

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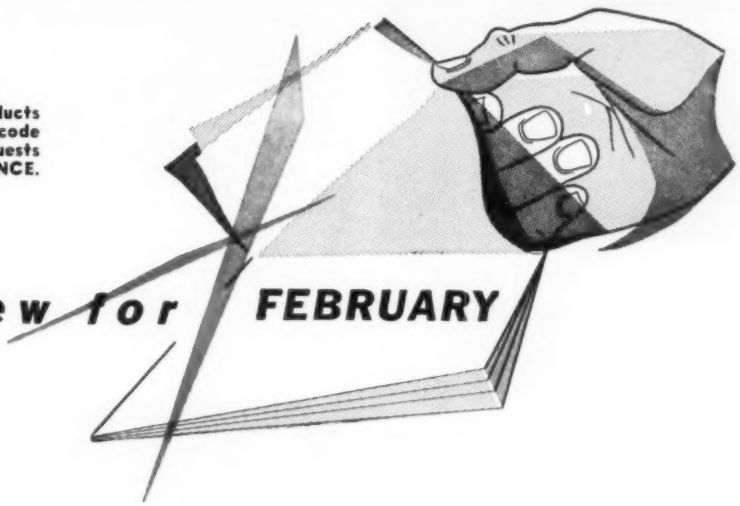
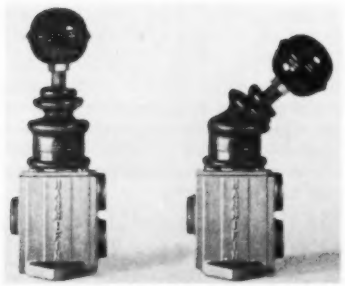


what's new for FEBRUARY



VALVE DUST BOOT

(Use Key # 500 on inquiry card on page 1)

A SNUG-FITTING, wear resistant synthetic boot, providing maximum protection for hand valve actuating mechanisms against dirt and moisture, has been announced by Hannifin Co. The boots keep dirt out of the hand toggle head assembly without hampering normal valve operation. They are particularly suited for outdoor service, foundry applications or wherever moisture and dust are a problem. The low-cost boots can easily be installed on Hannifin Series "C" and "CC" hand valves now in use, or are offered as an optional feature on new valves.

APPROVED PAINT RESPIRATOR

(Use Key # 501 on inquiry card on page 1)

A NEW respirator for protection against sprays and vapors of enamels, lacquers and lead-based paints has been developed by the American Optical Co. This is the first paint spray respirator to be approved by the U. S. Bureau of Mines. The AO Safety Products Division says the unit is more compact than others on the market. It consists of a rubber face piece, covering the nose and mouth, and two chemical cartridges. The latter contain pre-filters to catch paint droplets and an inner unit to filter out hazardous fumes and vapors. Any of 16 other cartridges can be used in the basic face piece for protection against a wide range of respiratory hazards. Screw-in cartridges are easily changed. Unit is available either with or without goggles.

LIGHTWEIGHT BUMP CAP

(Use Key # 502 on inquiry card on page 1)

LIGHTWEIGHT HEAD protection introduced by the E. D. Bullard Co., and known as the Bullard Bump Cap, is said to be comfortable, easy to store and clean, and inexpensive. It is made of impact-resistant plastic material that will not crack, dent or shatter. A top lining of foam cushions blows, and a foam sweatband holds the cap on the head and absorbs perspiration.

The cap can be utilized by those working in close quarters, such as overhead assembly lines, crowded engine and pump rooms, under the hoods of cars and trucks and under aircraft; and also protects men working near systems of conduits or pipes, such as breweries, distilleries and refrigeration plants.

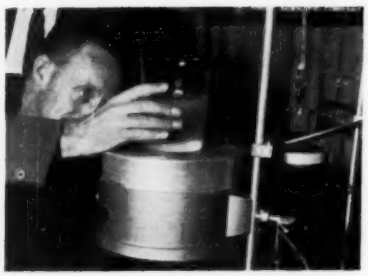
WELDING HELMET WITH NEOPRENE LENS HOLDER

(Use Key # 503 on inquiry card on page 1)

A NEW WELDING HELMET, announced by Chicago Eye Shield Co., features a moulded neoprene lens retainer which mounts on the helmet without fasteners of any type. This, in combination with new delrin pivot assemblies and nylon chin rest bolts, eliminates all electrical conductivity between the exterior and interior of the helmet. The helmet shell is fiber glass.

The retainer accommodates the 4½" x 5¼" size lenses. Wearers of bi-focal glasses benefit from the increased downward viewing area. A choice of conventional glass plates or Plasti-Weld (plastic) filters may be used. The helmet is said to be seven ounces lighter than helmets with glass lenses and metal retainers of the same size. The rubber retainer is an excellent shock absorber and prevents the breakage of lenses if the helmet is dropped. The retainer also reduces heat transfer from exterior of helmet.

The rubber retainer cannot dent or bend, preventing the possibility of light leakage. Weld spatter has no effect. Lens retention is accomplished without the use of springs or other devices not an integral part of the retainer. No tools are needed for changing lenses. The nylon headgear features a broad cross strap adjustable for both height and position. Further comfort is provided by replaceable foam sweatbands on headband and cross strap.



NEW LIQUID STIRRER

(Use Key # 504 on inquiry card on page 1)

A JUMBO MAGNETIC STIRRER, which stirs liquids of a wide variety of viscosities, has been announced by Fisher Scientific Co. It will handle quantities up to 3 gallons, and any glass, porcelain, plastic or non-magnetic vessel, open or closed, may be used to hold the liquid. Magnetic lines of force do the work, eliminating the contaminant-collecting shaft and impellers of mechanical stirrers, and permitting safe and complete access to the top of the sample container. A small, protected Alnico magnetic bar, sealed in Teflon, is placed inside the container; it revolves at the same speed as the stirrer-motor, which is rated at 1500 rpm.

The sample container can be open or completely closed, even sealed tight under vacuum or pressure, and the contents are mixed efficiently, rapidly, quietly, at rheostat-controlled speeds that range from an almost stationary "low" to a speedy "high." The stirrer, 9" in diameter and 6" high, is anodized aluminum.

TRUCK & DRAIN RACK UNIT

(Use Key # 505 on inquiry card on page 1)

A COMBINATION truck and drain rack that is designed for users of solvents, cutting oils and detergents, is being manufactured by Palmer-Shile Co. It can be easily moved through crowded, narrow aisles and around heavy machinery. Loading is accomplished by tilting truck against drum and sliding steel fingers down to engage top rim of drum; then truck is rocked back to wheeling position, and loading is automatic. Slight downward push on truck handles raises wheels and lays rack on floor, providing convenient drain of drum. Equipped with detachable handles that may be removed to conserve floor space.

ASPHALT PATCHER

(Use Key # 506 on inquiry card on page 1)

DANGEROUS HOLES and cracks in asphalt driveways, floors and parking areas can be repaired without repaving the entire area, with new Patch 'N Pave, Griffin Enterprises has announced. The liquid form product can be used by anyone, and requires no heating or rolling or other processes associated with asphalt paving. All that is necessary is to sweep out the crack, pour on the product, smooth with hand trowel and let it set. In less than four hours it is completely bonded to the existing asphalt and forms a stronger surface than the original paving.

SELF-PROPELLED STAGING

(Use Key # 507 on inquiry card on page 1)

DESIGNED FOR JOBS which can be done more efficiently with some form of moveable unit is the new Move-On self-propelling staging, a product of Anderston-Clyde, Inc. The new device has a platform height of 4' 6" adjustable to a maximum of 8' 6", providing a working height of 15 to 16 feet. The operator can move himself forward or backward by rotating a handle situated on the platform rail. A second handle works the steering gear; controls are easy to use. The platform has a strong guard rail and triple banded rectangular tool cradle. The unit is galvanized gainst rusting. A safety brake holds staging in place while work is in progress.

TWO-WAY MOBILE RADIO

(Use Key # 508 on inquiry card on page 1)

FEATURING A FULLY transistorized power supply and rugged, compact design, Du Mont has announced a 15-watt version of its recently developed Transicom two-way radio for use in the 144-174 mc band. The new 15-watt, under-the-dash mounted unit, model 326A, is also available in a 30-watt unit.

The transmitter/receiver radio utilizes transistors, other semi-conductors, and vacuum tubes in a design which eliminates complicated printed circuitry and affords ease of maintenance through accessibility of all component parts.

The 326A has a special 3" x 5" speaker built directly into the front panel as an integral part of the radio set with the audio chamber directing the sound to the driver's ear. Only two basic controls are used. One is a double-function power switch which includes battery drain-saving circuitry, and the second is a combination volume and squelch control. Optional features are dual frequency transmitters and coded squelch. Unit's weight is 14 pounds; dimensions are 4¼ inches high, 8⅜ inches wide, and 12 inches deep.

BO'S'N'S SWING

(Use Key # 509 on inquiry card on page 1)

A FULLY ADJUSTABLE bo's'n's swing, which is claimed to give greater safety, convenience and comfort than any other ever built, has been announced by Rose Mfg. Co. Tensile strength nylon webbing

used in risers and waist straps, and three inch four-ply cotton body pad hold worker snugly and securely. Unit adjusts to fit any worker; can be ordered with or without hardwood seat which straps into swing; strap construction prevents seat from becoming accidentally disengaged.

The Safe-Hi swing can also be equipped with swing spreader, so that worker gets greater work area free from riser strap interference. A Double Safe model features adjustable chest strap in addition to waist strap, for maximum security with freedom of movement.

WASTE CAN BAGS

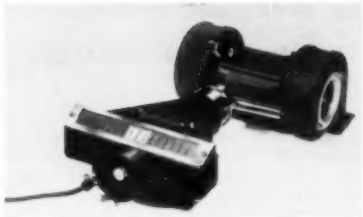
(Use Key # 510 on inquiry card on page 1)

A NEW BAG made of Clupak extensible kraft, size 17 x 13 x 31" high, is offered by the Klean Kan Bag Co. This is a large utility size which fits up to 30 gallon garbage cans. The bag, named the Klean Kan Toughboy, is said to be 50% stronger than the same size waxed kraft bag in the company's line; offered at the same price.

PLASTIC COATED GLOVES

(Use Key # 511 on inquiry card on page 1)

PLASTIC-IMPREGNATED work gloves, said to outwear canvas gloves several times yet retain unusually high finger dexterity, have been introduced by Jomac Inc. The Cromac gloves, reported to also have a higher snag resistance, are made from a napped cloth impregnated on one side with polyvinyl chloride. The plastic impregnation provides them with a firm gripping surface, while the napped cloth on the inside of the glove promotes wearer comfort. Useful for handling metals, plastics, glass, brick, stone, etc., the gloves may be washed repeatedly.



VIBRATION METER

(Use Key # 512 on inquiry card on page 1)

THE DAVEY VIBROMETER Model-1, offered by The Vibroscope Co., is used for testing motors and other equipment. It measures vibration amplitude by oscillation of a light beam on a graduated ground glass scale. The following are recent improvements in design. The glass scale is now mounted at an angle of 30° for more convenient reading. High frequency response has been increased. Models are available with full scale readings of .032", .016", .004" and .002". Hand held models are also available.

SAFETY SPECTACLES LINE

(Use Key # 513 on inquiry card on page 1)

A LINE of general purpose safety spectacles, combining comfort with durability, has been introduced by Air Reduction Sales Co. Tough enough to withstand rough use, yet light-weight, cool and comfortable, the plano-type spectacles come in three models: Airco 60, without sideshields; Airco 61, with partial sideshields; and Airco 62, with full sideshields. Super-hardened lenses provide impact protection in machine work, tool operations, laboratory work or other operations where eye safety is a factor. Universal bridge size fits most users, simplifies inventory problems.

DEODORIZING WASTE CAN

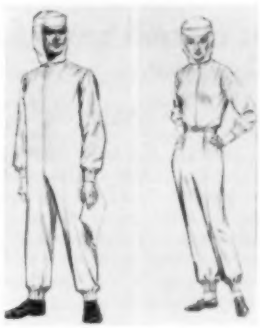
(Use Key # 514 on inquiry card on page 1)

NEW FOOT-OPERATED receptacle designed by Woodlets, Inc. for use in hospitals, rest rooms, doctors' offices, schools, etc., features completely noiseless closing and a built-in sanitizing spray dispenser. The Air-San receptacle dispenses Oxium deodorant spray by means of a push-button located in the top of the unit. The rust-proof, Epon-coated removable liner is stain-proof and impervious to most chemicals and alkalis. Available in five finishes. Easily replaced cartridges deliver 250 to 300 sprays.

NEW WORK CLOTHING

(Use Key # 515 on inquiry card on page 1)

ACID-RESISTANT, lint-free and static free work clothing, especially designed for wear in corrosive areas, "clean rooms" and hazardous operations, has been announced by Worklon, Inc. The line includes coveralls, lab coats, shirts, trousers, dresses, slacks sets and caps. The firm is also introducing a recent development in fabric blends. This new Dacron blend is both lint-free and static free and offers good resistance to deterioration by acids and



caustics. Garments made of this fabric meet a need in industry's sensitive areas of missile manufacturing, electronic guidance systems and components' production, semiconductor manufacturing and in the nuclear energy field.

LP FLOOR MACHINE

(Use Key # 516 on inquiry card on page 1)

A NEW LP-POWERED vacuum floor cleaner announced by Handling Devices Co. provides the features and mobility of gasoline models without the fumes or objectionable odors. The Floormobile offers dust-free floor cleaning of large floor areas at speeds up to 20,000 square feet an hour. It deposits dust and all dirt, trash, shavings, chips, cloth, scrap, etc., into an easily emptied dirt can; Powerful suction action cleans without whipping up clouds of dust.

The unit cleans a path 22" wide. It is extremely maneuverable, cleans right up to walls, machines, cartons, etc., and gets into corners and cracks that can't be swept clean with a broom. The LP machine uses all UL Approved fittings, regulators and lines. Compared to gasoline, the LP gas is said to lengthen the life of the engine, burn cleaner, leave no carbon deposits.

LENS CLEANER CONTAINER

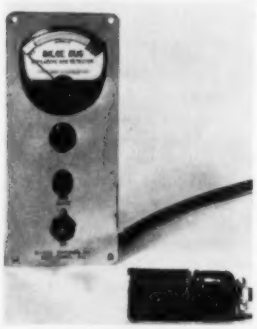
(Use Key # 517 on inquiry card on page 1)

A NEW, HIGH DENSITY polyethylene gallon container for their liquid lens cleaner, K-Lens-M, has been announced by Wilkins Co. The square shaped receptacle, supplied by Plax Corp., weighs less than the glass jug previously used, for greater economy in handling and shipping, and is shatterproof; it has a phenolic cap. It is also said to require 37% less storage space than its predecessor.

TRANSISTOR HEARING AID

(Use Key # 518 on inquiry card on page 1)

A FOUR TRANSISTOR hearing aid designed for persons with a mild or "borderline" hearing loss, but with a built-in reserve power for more severe impairments, has been announced by Zenith Radio Corp. The Courier unit features a four-position tone control; Phone Magnet for better telephone hearing with elimination of air-borne sounds; volume control combined with on-off switch, and choice of standard response, low or high frequency emphasis. The new product uses a carbon zinc battery offering approximately 100 hours for as little as 11 cents.



EXPLOSIVE GAS DETECTOR

(Use Key # 519 on inquiry card on page 1)

A NEW INSTRUMENT for the detection of dangerous or explosive vapor mixtures has been introduced by Engelhard Industries, Inc. Consisting of a control and indicator panel, a sensor unit and a connecting cable assembly, the Bilge Bug is supplied for two operating voltages of 6 and 12 volts DC, and draws a current of only 1.2 amperes. The sensor unit is installed in any location where combustible mixtures may collect and the control unit is mounted in a convenient location.

In operation, the switch is turned on, and a pilot light indicates proper operation and illuminates the face of the meter. Within seconds, the two platinum wire sensing elements will react to the presence of vapors and indicate the condition on the meter. If the reading is "safe," the instrument may be turned off and the engine started. For use on boats, in industry, and other locations.

NEW FACE SHIELDS

(Use Key # 520 on inquiry card on page 1)

NEW UNITS designed for the wearer's safety and comfort, as well as easier adjustment and simpler maintenance, are available from Flood Safety Products Co. There is ample room for wearing safety glasses or goggles underneath. All the shields are equipped with interchangeable and replaceable windows, in either acetate, vinyl or brass screen mesh; high impact and fire resistant windows can also be furnished. The new Flood face shields are equipped with Fit-Rite headgear which permits easier head size and crown height adjustments. Crown material is fiberglass.

REMOTE READING SYSTEM

(Use Key # 521 on inquiry card on page 1)

THIS REMOTE INDICATING load cell system permits instantaneous, direct readings of forces, in pounds, at distances over 1000 feet from the actual cell. Applications are found wherever site proximity is inconvenient, dangerous, confined or outside of naked eye range, such as a scale dial located on a crane high off the floor or a setup on a rocket test stand, etc. The system utilizes an exclusive differential transformer principle. All tubes, amplifiers and expensive, troublesome circuitry has been eliminated by a special inverse-ratio circuit which carries sufficient voltage for integral magnification. The temperature compensated circuit utilizes semi-conductors entirely. Separate reference charts, conversion tables and circuit balancing are also completely eliminated.

As many as four load cells may be used with one indicator which totalizes individual loads. Typical applications for multiple cells are found on electronic platform scales and setups measuring structural stresses over extended areas. Accuracy is guaranteed to within ½ of 1% of the full capacity at any point on the dial. Non-magnetic. Sensitive to load changes of 1/10th of 1% of scale capacity. Easy-to-read, linear dial spacing, 8–1 safety factor. Hysteresis is less than 1/10th of 1% of full scale capacity. Tare loads of up to 30% can be quickly cancelled out at the indicator. Available in tensile, compression or combination push-pull types in 27 capacities from as low as 0–150 lbs. up to 0–200,000 lbs. All cells are fully sealed. Explosion-proof versions also available.

NON-SPARKING PLIERS

(Use Key # 522 on inquiry card on page 1)

A GROUP OF MINIATURE safety pliers, supplementing its line of non-sparking tools, is offered by the Beryllium Corp. Suited for use in electronics, radar and other electrical applications, the new line includes curved needle-nose, duck-bill, long-nose, and diagonal-cutting types. Made of a special alloy of beryllium and copper, the pliers are non-magnetic, non-corrosive and do not spark under severe use, thus eliminating serious occupational hazards in volatile or explosive atmospheres.

EMERGENCY LIGHTING

(Use Key # 523 on inquiry card on page 1)

NEW EMERGENCY lighting units, the DR-409/50LAT and the DR-409/100LAT, with 50 and 100-ampere hour rechargeable batteries, respectively, have been announced by Electro Powerpacs, Inc. The two Dynaray models have 6-volt lead acid batteries; transistor controlled charging. Operation is without switches or dials, and occurs automatically the instant there is a failure of normal lighting. The units will switch to either the "high" or "trickle" charge rate, as required by the battery. Visible meter indicates voltage at all times. Electrolyte level and multi-color specific gravity floats are visible and may be viewed from a considerable distance, to determine the state of charge of the battery. Approved by Underwriters' Laboratories.

SAFETY SPECTACLES

(Use Key # 524 on inquiry card on page 1)

NEW SAFETY GLASSES which include a two-tone frame made from first quality cellulose acetate butyrate, have been announced by Glendale Optical Co. The spectacles are designed to provide eye protection combined with good looks for both men and women. Available in a range of eye and bridge sizes; spatula temples in all sizes. Frames are charcoal gray on crystal.

LENS CLEANING TISSUES

(Use Key # 525 on inquiry card on page 1)

A POCKET PACK of No-Fog lens cleaning tissues is being marketed by Carhoff Co. These tissues are used to clean and fog-proof eye glasses, goggles, face shields and coated lenses for cameras and projectors. This convenient pack may be utilized by office workers and others, as well as employees of industrial plants, who are not working near a goggle cleaning station. The No-Fog tissues are said to clean and fog-proof either glass or plastic lenses in one operation. They can be used wet or dry, and re-used several times.

INSULATED WATER CANS

(Use Key # 526 on inquiry card on page 1)

A GALVANIZED steel water can lined with polyethylene and insulated with urethane foam is available in two-, three-, five- and ten-gallon sizes from H. P. Gott Mfg. Co. The heavy, replaceable polyethylene liner handles either hot or cold beverages; it is seamless, won't leak and is easy to keep clean and sanitary. Weight savings, compared with other containers, run up to 20%. In addition to maintaining proper temperature inside the can, the urethane foam also adds structural strength. It will not crumble or settle with rough treatment. Nylon faucets eliminate metal contact with contents and aid in insulation.

NEW FLOOR CLEANER

(Use Key # 527 on inquiry card on page 1)

A FAST-ACTING liquid synthetic cleaner has been developed by Multi-Clean Products, Inc., for use with scrubbing machines and vacuum cleaners. Lo-Foam contains a foam-inhibiting additive known as LF-7; the foam which is generated, breaks down and disappears in a matter of seconds. This eliminates excess foaming in the vacuum pick-up which might result in mechanical delays. Safe for use on all type floors and also on walls, windows, plastic, furniture, metal doors, etc. It is said to leave no film or residue. Lo-Foam attacks all types of dirt. Recommended dilution is 20 to 1.

PORTABLE MACHINE LIFT

(Use Key # 528 on inquiry card on page 1)

A PORTABLE LIFT which can be quickly disassembled and assembled again in less than 2 minutes, and is capable of holding and transporting office machines, air conditioners, appliances and other loads up to 400 lbs., has been announced by Grand Specialties Co. The Erect-A-Lift has been specially designed for servicemen and installers.

It features an efficient screw type lift system requiring only 11 lbs. hand pressure to raise load forks. It can quickly lift load from floor (or out of crate) to 31 inch height. The assembled unit is specially designed to fit through all standard doors and into all elevators. Models with different load capacities also available.

WHEEL BLOCK CARRIER

(Use Key # 529 on inquiry card on page 1)

A NEW CASTEEL Wheel Block Carrier, that enables the driver to conveniently carry his own safety wheel block right with the truck, has been developed by Calumet Steel Castings Corp. The carrier, painted a traffic yellow, can be mounted vertically on the side or horizontally on the underside of the truck. The blocks are carried or stored out of the way, but are readily available. Eliminates searching for suitable wheel blocks.

WATER LEVEL GAUGE

(Use Key # 530 on inquiry card on page 1)

DEVELOPMENT OF AN inexpensive water level gauge and sampler, Model 1100, has been announced by Universal Valve Co. Basically, the sampler is of a simple, functional design and construction, consisting of a clear plastic tube, insoluble in gasoline; and a simple poppet type valve at the bottom which includes a plastic valve body.

Instead of being mounted on a separate pole, the water level sampler is attached to any standard gauge pole by means of two screws, thereby enabling two checks to be made simultaneously. Operated simlpy by lowering it into the underground storage tank until it hits bottom, thereby forcing the stem to open the valve and allowing sample of the liquid to enter the tube. As the sampler is raised, the valve closes, entrapping the core sampling. For application on any liquid, petroleum or chemical storage tank, barge or tankers.

BURN RELIEF SPRAY

(Use Key # 531 on inquiry card on page 1)

A FAST-ACTING aerosol spray for burns, G-63, has been introduced by General Scientific Equipment Co. Packaged in 8-ounce spray-on cans, the product coats the skin instantly with a protective and invisible film that not only isolates the burn but greatly speeds the healing process and provides immediately effective relief from pain, the company reports. G-63 eliminates messy creams and the need for bandages, as well. Reduces swelling, and guards against secondary infection through the use of Hexachlorophene. Its pain-reducing agent is an analgesic agent.

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S.M. . . . first and foremost in the field of industrial accident prevention, fire control, maintenance and hygiene. Its top editorial content gives current news and views to help you. . . .

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- ✓ HALT WORK STOPPAGES
- ✓ IMPROVE SAFETY RECORDS

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It also places at your disposal—through reader inquiry service—the complete facilities of our Safety Division which provides the answers to any safety problems you may have—*at no additional cost.*

SAFETY MAINTENANCE
AMERICA'S PIONEER INDUSTRIAL SAFETY MAGAZINE EST. 1901
Alfred M. Best Co., Inc.
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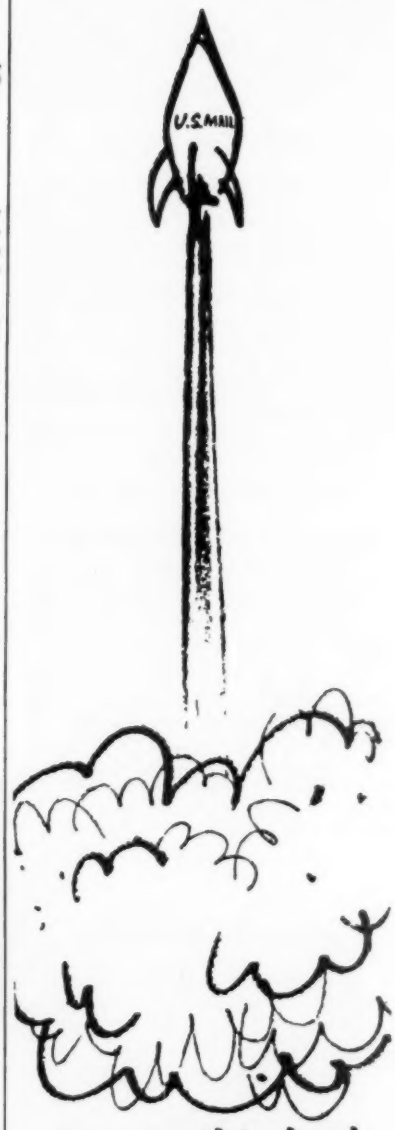

zone mail indeed results in speed

The Post Office has divided 106 cities into postal delivery zones to speed mail delivery. Be sure to include zone number when writing to these cities; be sure to include *your* zone number in *your* return address — after the city, before the state.

SEND THIS PERSONAL SAFETY MESSAGE TO EVERY ONE OF YOUR EMPLOYEES.

- Safety is made appealling . . . vivid . . . engaging . . . colorful!
- Each worker clearly sees how safety benefits him . . . how doing his part helps others!
- You get enthusiastic safety cooperation instead of tolerance . . . from every employee . . . every month!

SAFETY NEWS
DESIGNED FOR YOUR SAFETY
What Happened?
It was just a beam of scrap lumber. Someone had cut it diagonally across the corner as a seat for lunch and it was overlooked when other scrap was removed. Later, as a derrick hoisted a new girder, a sudden gust of wind swung the girder so it knocked the beam off the cornice.
Who was to blame? Those who put it on the cornice? The clean-up man? The derrick operator? The wind? All had a hand in the accident. And that's the way a lot of accidents are caused. If just one element had been different, it never would have happened!
As we see it: The safety of others often depends on you.

...talks the worker's language!

YOUR IMPRINT HERE!

Packed with pictures, alive with animated cartoons, touched with humour that gives snap to your message, it makes safety interesting and down to earth. Twelve times a year it covers accident hazards. Across the nation leading industrial firms state it's the only safety paper their employees will read . . . and take home to their families.

It gives the employer the advantages of personal contact . . . saves time and expense. One "lost time" accident prevented . . . more than pays for the yearly cost! Try it . . . it works!

YOUR SIGNATURE HERE!

Make *Your Safety News* your own publication . . . your good will ambassador . . . working for you toward better industrial relations. If you wish, your facsimile signature can be printed here to identify you with the message that gets next to your men and boosts morale.

NOTE: *Your Safety News* is designed to promote better employer-employee relations. Every item is carefully weighed and tailored to this viewpoint!

INSIDE PAGES
(Pages 2 and 3)

THOUGHTLESSNESS IS A THIEF
He'll steal his way into what you're doing, distract your attention and walk off with a finger, arm, eye or foot. Thoughtlessness takes many forms: it may be daydreaming, or worry about some personal problem, or just plain inattention. Anything that distracts you, especially around machinery, is a thief of your personal safety.
PLAYFULNESS IS A PIRATE
He is a deceptive rascal. His hi-jinks may put him in the spotlight, but his practical jokes and showing-off often result in serious bodily injury and even death. And note this: he, himself, has lost a leg! As so often happens, horseplay can boomerang and the practical joker gets hurt too!
What You Should Know About Carbon Monoxide
This is a picture of carbon monoxide gas!
That's right, you can't see it. It's colorless, non-irritating, tasteless, practically odorless, but also deadly.
Here are the symptoms of carbon monoxide poisoning: First, a right feeling across the forehead, followed by headache, throbbing temples, weariness, weakness, dizziness, nausea, loss of muscular control, increased pulse and breathing. BUT if the concentration of the person gas is high, there may be loss of consciousness without these warning signals.
Just a few breaths of air containing 1% carbon monoxide can be fatal . . . so can one part of carbon monoxide in a thousand parts of air when breathed for 90 minutes.
It is possible for carbon monoxide to leak inside of a car if there is a loose exhaust pipe or manifold connection, blown-out exhaust gasket, cracked exhaust manifold, or leaky muffler. Play it safe.
1. Be sure your muffler and exhaust are in good condition (they can leak long before they become noisy).
2. Always keep a car window open, even a little, for fresh air.
AN INTIMATE LOOK AT FOUR VILLAINS
SAFETY LAZINESS IS A SIMON LEGREE
If you are lazy about safety rules, then accidents will leave the whip hand. We are safety-lazy when we don't bother to use mechanical guards, to take time to get the right tools for the job, to wear protective equipment such as goggles, hard hats, safety shoes, respirators, gloves, etc. Yes, Simon Legree has a whole pack of accident hounds to trail you.
HAZARDOUS METHODS ARE A HOLD-UP MAN
This villain, unsafe work habits, likes to lie in ambush for the unwary. But how do we fall into bad working habits? It may be by trying to cut corners, by wanting to keep to the old way of doing things, or by over-confidence. It's hard for anyone to believe that an accident can happen to him. It's easier to make excuses to ourselves for ignoring safety rules, but alibis only lead us up a blind alley with an accident waiting in ambush.
Two Excellent Reasons
For Wearing Safety Shoes

EMPHASIZES SELF INTEREST

Your employee's self interest in his own safety is always emphasized. Constant safety consciousness is promoted by covering household hazards, transit to and from the job and on the job caution against accidents.

CLEVERLY ILLUSTRATES THE POINT

Artwork is carefully chosen to lodge home each point persuasively. The cartoon style makes YOUR SAFETY NEWS as familiar and welcome as the picture packed Sunday supplement.

WINS READERS WITH A FOLKSY APPROACH

Keeping the contents folksy, adding the light note of humor, gets your message across with a nudge instead of a bludgeon. Your monthly chat gets enthusiasm instead of indifference.

RIVETS ATTENTION WITH VIVID COLOR

Generous use of color sparks the message, and adds impact to the contents of YOUR SAFETY NEWS. Each issue is as alive as any news-stand favorite.

HOW TO ORDER:

YOUR SAFETY NEWS may be ordered with either the standard imprint or with your Own Special Imprint. The standard imprint reads "PLEASE COOPERATE FOR THE SAFETY AND HEALTH OF ALL . . . signed . . . A SAFE WORKER."

You can personalize YOUR SAFETY NEWS with the name of your firm and the name or facsimile signature of a company representative as illustrated. Give full instructions for your Special Imprint on the order blank below:

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NOTE: Although a personal signature is effective, some firms substitute: SAFETY DEPARTMENT, YOUR SAFETY COMMITTEE, A SAFE WORKER, etc.

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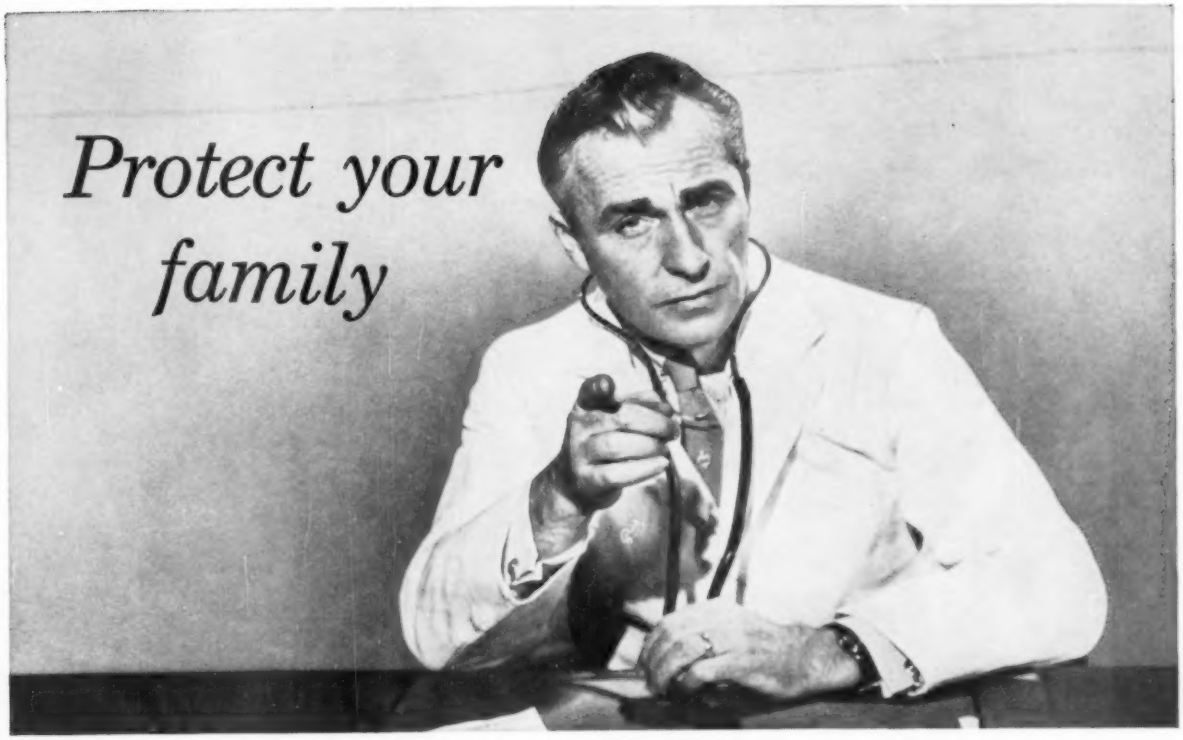

KNOW THESE FACTS

1 IF YOUR CHILD HAS A BAD SORE THROAT...

call your doctor, especially if there is difficulty in swallowing, swollen neck glands, high fever, nausea or vomiting. Prompt treatment of "strep" throat can prevent rheumatic fever and rheumatic heart disease.

2 IF YOU THINK YOU HAVE HIGH BLOOD PRESSURE...

see your doctor. Only he can tell. He can usually control it and decrease the chances of heart damage or "stroke".

3 STROKES ARE NOT HOPELESS...

Many patients can be treated effectively. Invalidism can be prevented or reduced.

Your Heart Fund dollars helped to produce these advances. But heart disease is still the nation's #1 health enemy. Further progress depends upon your support of medical research.

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Weekes[2] reports successful treatment with Lactinex of fever blisters and canker sores of herpetic origin.

SUPPLIED: *Tablets in bottles of fifty; Granules in boxes of twelve one gram packets.*

1. Siver, R.H.: Current Medical Digest, Vol. XXI, September 1954.

2. Weekes, D.J.: New York State Journal of Medicine, Vol. 58, August 1958.

HWD

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